Expanded Site Inspection 3/98

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Appendix G

Analytical Results - Victoria Golf Course

LOCKHEED MARTIN

VGC/VOC/PML
RW

Lockheed Martin Environmental Services
Environmental Services Assistance Team, Region 9
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MEMORANDUM

TO: Rachel Loftin
Site Assessment Manager
States Planning and Assessment Office, SFD-5

THROUGH: Rose Fong
ESAT Regional Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Jack Berges
Team Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68D60005
Work Assignment No.: 9-96-0-4
Technical Direction No.: 9604112

DATE: February 10, 1997

SUBJECT: Review of Analytical Data

Attached are comments resulting from ESAT Region 9 validation of the following analytical data:

SITE:	Victoria Golf Course
SITE ACCOUNT NO.:	ZZ
CERCLIS ID NO.:	CAD980818926
CASE NO.:	25218 Memo #01
SDG NO.:	YX323
LABORATORY:	American Technical & Analytical Services (ATAS)
ANALYSIS:	Volatiles and Semivolatiles
SAMPLES:	12 Water Samples (see Case Summary)
COLLECTION DATE:	December 9 through 13, 1996
REVIEWER:	Dina David-Bailey, ESAT/Lockheed

The comments and qualifications presented in this report have been reviewed and approved by the EPA Work Assignment Manager (WAM) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Deirdre O'Leary (ESAT/Lockheed) at (415) 278-0585 or Rose Fong (QA Office/EPA) at (415) 744-1534.

Attachment

cc: Larry Marchin, TPO USEPA Region 7

TPO: [ ]FYI [X]Attention [ ]Action

SAMPLING ISSUES: [X]Yes [ ]No

LOCKHEED MARTIN

Data Validation Report

Case No.: 25218 Memo #01
Site: Victoria Golf Course
Laboratory: American Technical & Analytical Services (ATAS)
Reviewer: Dina David-Bailey, ESAT/Lockheed
Date: February 10, 1997

I. Case Summary

SAMPLE INFORMATION:

VOA and BNA Samples:	YX322 through YX326, YX328 through YX333, and YX363
Concentration and Matrix:	Low Level Groundwater
Analysis:	Volatiles and Semivolatiles
SOW:	OLM03.2
Collection Date:	December 9 through 13, 1996
Sample Receipt Date:	December 11, 13, and 14, 1996
BNA Extraction Date:	December 12 and 16, 1996
VOA Analysis Date:	December 12 and 17, 1996
BNA Analysis Date:	December 18, 30, and 31, 1996 and January 17, 1997

FIELD QC:

Trip Blanks (TB):	None
Field Blanks (FB):	YX331
Equipment Blanks (EB):	YX330, YX332, and YX333
Background Samples (BG):	YX324 and YX325
Field Duplicates (D1):	YX326 and YX363

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLKDM:	YX323, YX323MS, YX323MSD, YX328, and YX330
VBLKDP:	YX322, YX324 through YX326, YX329, YX331 through YX333, YX363, and VHBLKDP
SBLKEA:	YX322, YX322RE, YX324 through YX326, YX326RE, YX329, YX329RE, YX331 through YX333, and YX363
SBLKEU:	YX323, YX323MS, YX323MSD, YX328, and YX330

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Volatiles and Semivolatiles: Continuing Calibrations

TPO ACTION:

None.

TPO ATTENTION:

(1) Several volatile results are qualified as nondetected and estimated (U,J) due to contamination in the storage blank. (2) Several results are estimated (J) due to calibration problems. (3) Several semivolatile results are estimated (J) due to low internal standard areas.

RE-Reanalysis; MS-Matrix Spike; MSD-Matrix Spike Duplicate;
VHBLK-Storage Blank

SAMPLING ISSUES:

The detected result for di-n-butylphthalate in sample YX323 is qualified as nondetected and estimated (U,J) due to contamination in equipment blank YX330. Di-n-butylphthalate was found in equipment blank YX330 at a concentration of 0.5 µg/L, which is less than the CRQL of 10 µg/L.

ADDITIONAL COMMENTS:

A temperature of 10°C was measured in the cooler containing samples YX324, YX326, YX329, YX331, and YX332, which were received at the laboratory on December 13, 1996. This temperature exceeds the 4°C ±2°C sample preservation criterion.

No Tentatively Identified Compounds (TICs) were found in samples YX323, YX325, YX326, YX329, YX331 through YX333, and YX363 for the volatile fraction. The TICs found in the remaining samples for the volatile fraction are reported on the Form 1Es. The TICs found in all of the samples for the semivolatile fraction are reported on the Form 1Fs and in the sample delivery group (SDG) narrative included in this report. The user should note that the SDG narrative summarizes TICs which are alkanes.

All method requirements specified in the USEPA Contract Laboratory Program (CLP) Statement of Work (SOW) for Organic Analysis, OLM03.2, have been met.

This report was prepared according to the SOW and the document "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

II. Validation Summary

	VOA		BNA	
	Acceptable/Comment		Acceptable/Comment	
HOLDING TIMES	[YES]	[ ]	[YES]	[ ]
GC/MS TUNE	[YES]	[ ]	[YES]	[ ]
CALIBRATIONS	[NO]	[D]	[NO]	[C,D]
FIELD QC	[NO]	[B]	[NO]	[B]
LABORATORY BLANKS	[NO]	[B]	[YES]	[B]
SURROGATES	[YES]	[ ]	[YES]	[ ]
MATRIX SPIKE/DUPLICATES	[YES]	[ ]	[YES]	[F]
INTERNAL STANDARDS	[YES]	[ ]	[NO]	[E]
COMPOUND IDENTIFICATION	[YES]	[G]	[YES]	[G]
COMPOUND QUANTITATION	[YES]	[A]	[YES]	[A]
SYSTEM PERFORMANCE	[YES]	[ ]	[YES]	[ ]

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The following detected results are qualified as nondetected and estimated due to laboratory, equipment, and field blank contamination. The results are flagged "U,J" in Table 1A.

- Methylene chloride in volatile samples YX322, YX324 through YX326, YX328, YX329, and YX363
- Di-n-butylphthalate in semivolatile sample YX323

Methylene chloride was found in the storage blank, equipment blanks YX332 and YX333, and field blank YX331. Di-n-butylphthalate was found in equipment blank YX330. (See Table 1A for concentrations.) The results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

Although bis(2-ethylhexylphthalate) was found in equipment blank YX330 at a concentration of 1 µg/L and di-n-octylphthalate in method blank SBLKEU at a concentration of 0.5 µg/L, no data are qualified because these analytes were not found in any of the associated semivolatile samples.

A storage blank is laboratory reagent water stored in a vial in the same area as the field samples. The storage blank is used to determine the level of contamination introduced by the laboratory during sample storage prior to analysis.

An equipment blank is clean water that has been collected as a sample using decontaminated sampling equipment. The intent of an equipment blank is to monitor for contamination introduced by the sampling activity, although any laboratory introduced contamination will also be present.

A field blank is clean water prepared as a sample in the field by the sampler and shipped to the laboratory with the samples. A field blank is intended to detect contaminants that may have been introduced in the field, although any laboratory introduced contamination will also be present. Contaminants that are found in the field blank which are absent in the laboratory method blank could be indicative of a field quality control (QC) problem, a deficiency in the bottle preparation procedure, a difference in preparation of the laboratory and field blanks, or other indeterminate error.

C. The quantitation limits for the following semivolatile analytes are estimated due to large percent relative standard deviations (%RSDs) in the initial calibration. The results are flagged "J" in Table 1A.

- 2,4-Dinitrophenol and 4-nitroaniline in samples YX323, YX328, and YX330

Percent RSDs of 31.6 and 33.1 were observed for 2,4-dinitrophenol and 4-nitroaniline, respectively, in the initial calibration

performed January 7, 1997. These values exceed the ≤30.0% QC advisory validation criterion.

The initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical sequence and of producing a linear calibration curve.

D. The detected result and quantitation limits for the following analytes are estimated due to large percent differences (%Ds) in the continuing calibrations. The results are flagged "J" in Table 1A.

- trans-1,3-Dichloropropene in volatile samples YX322, YX324 through YX326, YX329, YX331 through YX333, YX363, method blank VBLKDP, and storage blank VHBLKDP
- Pyrene and di-n-octylphthalate in semivolatile samples YX322, YX325, YX329, YX333, and YX363

Percent differences exceeding the ±25.0% QC advisory validation criterion were observed for the analytes listed above in the continuing calibrations performed December 17 and 31, 1996 (see Table 2).

The continuing calibration checks the instrument performance daily and produces the relative response factors for target analytes that are used for quantitation.

E. The detected results and quantitation limits for the following semivolatile analytes are estimated due to low internal standard areas. The results are flagged "J" in Table 1A.

- 4,6-Dinitro-2-methylphenol, N-nitrosodiphenylamine, 4-bromophenyl phenyl ether, hexachlorobenzene, pentachlorophenol, phenanthrene, anthracene, carbazole, di-n-butylphthalate, fluoranthene, pyrene, butylbenzylphthalate, 3,3'-dichlorobenzidine, benzo(a)anthracene, chrysene, and bis(2-ethylhexyl)phthalate in samples YX322 and YX326
- Di-n-octylphthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene, and benzo(g,h,i)perylene in samples YX322, YX326, and YX329

The internal standard areas for the samples listed above fell below the QC advisory criterion, as shown below.

Sample	Internal Standard	Area	QC Limits
YX322	Phenanthrene-d_{10}	47900	49372-197486
	Chrysene-d_{12}	16882	18020-72082
	Perylene-d_{12}	9880	13708-54830
YX329	Perylene-d_{12}	13527	13708-54830
YX326	Phenanthrene-d_{10}	35633	41344-165374
	Chrysene-d_{12}	10019	12550-50198
	Perylene-d_{12}	6252	7692-30768

The detected results and quantitation limits for the analytes listed above are considered quantitatively questionable. Where the results are nondetected, false negatives may exist.

Samples YX322, YX326, and YX329 were reanalyzed due to the low internal standard areas in accordance with SOW requirements. The results from the reanalysis of sample YX322 are presented in Table

1A in order to minimize the number of qualified data points. The results from the original analysis of sample YX326 and the reanalysis of sample YX329 are presented in Table 1A because higher area counts were obtained in those analyses.

Internal standards, introduced into every calibration standard, blank, sample, and QC sample, monitor changes in analyte response due to matrix effects and fluctuations in instrument sensitivity throughout the analytical sequence. Internal standards are used to quantitate the concentration of target analytes and surrogate standards.

F. The matrix spike and matrix spike duplicate results for 4-nitrophenol and pentachlorophenol in semivolatile QC samples YX323MS and YX323MSD did not meet the criteria for accuracy specified in the SOW. The percent recoveries are presented below.

Analyte	YX323MS %Recovery	YX323MSD %Recovery	QC limits %Recovery
4-Nitrophenol	83	101	10-80
Pentachlorophenol	112	112	9-103

The results obtained may indicate poor laboratory technique, or matrix effects which may interfere with accurate analysis. Since these recoveries are above the QC limits and the sample results for these analytes are nondetected, no adverse effect on the quality of the data is expected.

Matrix spike sample analysis provides information about the effect of the sample matrix on sample preparation and measurement.

G. Although not detected in any associated blanks, acetone and phthalates have been commonly found as contaminants in the field and in many laboratories. The user should note that the analytes listed below may be artifacts.

- Acetone in volatile samples YX322, YX323, and YX329
- Diethylphthalate in semivolatile samples YX322 and YX324
- Di-n-butylphthalate in semivolatile samples YX322, YX324 through YX326, YX328, and YX363
- bis(2-Ethylhexyl)phthalate in semivolatile samples YX324 through YX326, YX328, YX329, and YX363

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #01
Site: Victoria Golf Course
Lab.: American Technical & Analytical Services (ATAS)
Reviewer: Dina David-Bailey, ESAT/Lockheed
Date: February 10, 1997

Analysis Type: Low Level Groundwater Samples for Volatiles

Concentration in µg/L

Station Location	GW-1-1			GW-2			GW-3-1			GW-4-1			GW-5-1		
Sample I.D.	YX322			YX323			YX324 BG			YX325 BG			YX326 D1		
Date of Collection	12/13/96			12/9/96			12/11/96			12/12/96			12/11/96		
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	10 U			10 U			10 U			10 U			10 U		
Bromomethane	10 U			10 U			10 U			10 U			10 U		
Vinyl chloride	25			10 U			10 U			10 U			10 U		
Chloroethane	10 U			10 U			10 U			10 U			10 U		
Methylene chloride	11 U	J	B	10 U			10 U	J	B	12 U	J	B	26 U	J	B
Acetone	11		G	2 L	J	AG	10 U			10 U			10 U		
Carbon disulfide	10 U			10 U			10 U			10 U			10 U		
1,1-Dichloroethene	10 U			10 U			10 U			10 U			10 U		
1,1-Dichloroethane	8 L	J	A	10 U			10 U			10 U			10 U		
1,2-Dichloroethene (total) DCE	48			10 U			3 L	J	A	10 U			10 U		
Chloroform	10 U			10 U			10 U			10 U			10 U		
1,2-Dichloroethane DCA	78			10 U			10 U			10 U			10 U		
2-Butanone	10 U			10 U			10 U			10 U			10 U		
1,1,1-Trichloroethane	10 U			10 U			10 U			10 U			10 U		
Carbon tetrachloride	10 U			10 U			10 U			10 U			10 U		
Bromodichloromethane	10 U			10 U			10 U			10 U			10 U		
1,2-Dichloropropane	10 U			10 U			10 U			10 U			10 U		
cis-1,3-Dichloropropene	10 U			10 U			10 U			10 U			10 U		
Trichloroethene TCE	13			10 U			10 U			10 U			10 U		
Dibromochloromethane	10 U			10 U			10 U			10 U			10 U		
1,1,2-Trichloroethane	10 U			10 U			10 U			10 U			10 U		
Benzene	10 U			10 U			10 U			10 U			10 U		
trans-1,3-Dichloropropene	10 U	J	D	10 U			10 U	J	D	10 U	J	D	10 U	J	D
Bromoform	10 U			10 U			10 U			10 U			10 U		
4-Methyl-2-pentanone	10 U			10 U			10 U			10 U			10 U		
2-Hexanone	10 U			10 U			10 U			10 U			10 U		
Tetrachloroethene PCE	10 U			10 U			10 U			10 U			10 U		
1,1,2,2-Tetrachloroethane	10 U			10 U			10 U			10 U			10 U		
Toluene	10 U			10 U			10 U			10 U			10 U		
Chlorobenzene CB	10			10 U			10 U			10 U			10 U		
Ethylbenzene	10 U			10 U			10 U			10 U			10 U		
Styrene	10 U			10 U			10 U			10 U			10 U		
Xylene (total)	10 U			10 U			10 U			10 U			10 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank
TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS

TABLE 1A

Case No.: 25218 Memo #01

Site: Victoria Golf Course

Analysis Type: Low Level Groundwater Samples for Volatiles

Lab.: American Technical & Analytical Services (ATAS)

Reviewer: Dina David-Bailey, ESAT/Lockheed

Date: February 10, 1997

Concentration in µg/L

Station Location	GW-9			GW-10-1			GW-11			GW-12-1			GW-13-1		
Sample I.D.	YX328			YX329			YX330 EB			YX331 FB			YX332 EB		
Date of Collection	12/10/96			12/11/96			12/9/96			12/10/96			12/10/96		
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	10 U			10 U			10 U			10 U			10 U		
Bromomethane	10 U			10 U			10 U			10 U			10 U		
Vinyl chloride	4 L	J	A	23			10 U			10 U			10 U		
Chloroethane	10 U			10 U			10 U			10 U			10 U		
Methylene chloride	10 U	J	B	10 U	J	B	10 U			14		B	5 L	J	AB
Acetone	10 U			3 L	J	AG	10 U			10 U			10 U		
Carbon disulfide	10 U			10 U			10 U			10 U			10 U		
1,1-Dichloroethene	10 U			10 U			10 U			10 U			10 U		
1,1-Dichloroethane	10 U			10 U			10 U			10 U			10 U		
1,2-Dichloroethene (total)	5 L	J	A	72			10 U			10 U			10 U		
Chloroform	10 U			10 U			10 U			10 U			10 U		
1,2-Dichloroethane	10 U			4 L	J	A	10 U			10 U			10 U		
2-Butanone	10 U			10 U			10 U			10 U			10 U		
1,1,1-Trichloroethane	10 U			10 U			10 U			10 U			10 U		
Carbon tetrachloride	10 U			10 U			10 U			10 U			10 U		
Bromodichloromethane	10 U			10 U			10 U			10 U			10 U		
1,2-Dichloropropane	10 U			10 U			10 U			10 U			10 U		
cis-1,3-Dichloropropene	10 U			10 U			10 U			10 U			10 U		
Trichloroethene	16			27			10 U			10 U			10 U		
Dibromochloromethane	10 U			10 U			10 U			10 U			10 U		
1,1,2-Trichloroethane	10 U			10 U			10 U			10 U			10 U		
Benzene	10 U			10 U			10 U			10 U			10 U		
trans-1,3-Dichloropropene	10 U			10 U	J	D	10 U			10 U	J	D	10 U	J	D
Bromoform	10 U			10 U			10 U			10 U			10 U		
4-Methyl-2-pentanone	10 U			10 U			10 U			10 U			10 U		
2-Hexanone	10 U			10 U			10 U			10 U			10 U		
Tetrachloroethene	10 U			4 L	J	A	10 U			10 U			10 U		
1,1,2,2-Tetrachloroethane	10 U			10 U			10 U			10 U			10 U		
Toluene	10 U			10 U			10 U			10 U			10 U		
Chlorobenzene	10 U			13			10 U			10 U			10 U		
Ethylbenzene	10 U			10 U			10 U			10 U			10 U		
Styrene	10 U			10 U			10 U			10 U			10 U		
Xylene (total)	10 U			10 U			10 U			10 U			10 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank

TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #01
Site: Victoria Golf Course
Lab.: American Technical & Analytical Services (ATAS)
Reviewer: Dina David-Bailey, ESAT/Lockheed
Date: February 10, 1997

Analysis Type: Low Level Groundwater Samples for Volatiles

Concentration in µg/L

Station Location	GW-14-1			GW-28-1			Method Blank			Method Blank			Storage Blank		
Sample I.D.	YX333 EB			YX363 D1			VBLKDM			VBLKDP			VHBLKDP		
Date of Collection	12/11/96			12/11/96											
Volatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Chloromethane	10 U			10 U			10 U			10 U			10 U		
Bromomethane	10 U			10 U			10 U			10 U			10 U		
Vinyl chloride	10 U			10 U			10 U			10 U			10 U		
Chloroethane	10 U			10 U			10 U			10 U			10 U		
~~Methylene chloride~~	~~9 L~~	~~J~~	~~AB~~	~~13 U~~	~~J~~	~~B~~	~~10 U~~			~~10 U~~			~~9 L~~	~~J~~	~~AB~~
Acetone	10 U			10 U			10 U			10 U			10 U		
Carbon disulfide	10 U			10 U			10 U			10 U			10 U		
1,1-Dichloroethene	10 U			10 U			10 U			10 U			10 U		
1,1-Dichloroethane	10 U			10 U			10 U			10 U			10 U		
1,2-Dichloroethene (total)	10 U			10 U			10 U			10 U			10 U		
Chloroform	10 U			10 U			10 U			10 U			10 U		
1,2-Dichloroethane	10 U			10 U			10 U			10 U			10 U		
2-Butanone	10 U			10 U			10 U			10 U			10 U		
1,1,1-Trichloroethane	10 U			10 U			10 U			10 U			10 U		
Carbon tetrachloride	10 U			10 U			10 U			10 U			10 U		
Bromodichloromethane	10 U			10 U			10 U			10 U			10 U		
1,2-Dichloropropane	10 U			10 U			10 U			10 U			10 U		
cis-1,3-Dichloropropene	10 U			10 U			10 U			10 U			10 U		
Trichloroethene	10 U			10 U			10 U			10 U			10 U		
Dibromochloromethane	10 U			10 U			10 U			10 U			10 U		
1,1,2-Trichloroethane	10 U			10 U			10 U			10 U			10 U		
Benzene	10 U			10 U			10 U			10 U			10 U		
~~trans-1,3-Dichloropropene~~	~~10 U~~	~~J~~	~~D~~	~~10 U~~	~~J~~	~~D~~	~~10 U~~			10 U	J	D	~~10 U~~	~~J~~	~~D~~
Bromoform	10 U			10 U			10 U			10 U			10 U		
4-Methyl-2-pentanone	10 U			10 U			10 U			10 U			10 U		
2-Hexanone	10 U			10 U			10 U			10 U			10 U		
Tetrachloroethene	10 U			10 U			10 U			10 U			10 U		
1,1,2,2-Tetrachloroethane	10 U			10 U			10 U			10 U			10 U		
Toluene	10 U			10 U			10 U			10 U			10 U		
Chlorobenzene	10 U			10 U			10 U			10 U			10 U		
Ethylbenzene	10 U			10 U			10 U			10 U			10 U		
Styrene	10 U			10 U			10 U			10 U			10 U		
Xylene (total)	10 U			10 U			10 U			10 U			10 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank
TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS

TABLE 1A

Case No.: 25218 Memo #01

Site: Victoria Golf Course

Analysis Type: Low Level Groundwater Samples for Volatiles

Lab.: American Technical & Analytical Services (ATAS)

Reviewer: Dina David-Bailey, ESAT/Lockheed

Date: February 10, 1997

Concentration in µg/L

Sample I.D.	CRQL														
Volatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Chloromethane	10														
Bromomethane	10														
Vinyl chloride	10														
Chloroethane	10														
Methylene chloride	10														
Acetone	10														
Carbon disulfide	10														
1,1-Dichloroethene	10														
1,1-Dichloroethane	10														
1,2-Dichloroethene (total)	10														
Chloroform	10														
1,2-Dichloroethane	10														
2-Butanone	10														
1,1,1-Trichloroethane	10														
Carbon tetrachloride	10														
Bromodichloromethane	10														
1,2-Dichloropropane	10														
cis-1,3-Dichloropropene	10														
Trichloroethene	10														
Dibromochloromethane	10														
1,1,2-Trichloroethane	10														
Benzene	10														
trans-1,3-Dichloropropene	10														
Bromoform	10														
4-Methyl-2-pentanone	10														
2-Hexanone	10														
Tetrachloroethene	10														
1,1,2,2-Tetrachloroethane	10														
Toluene	10														
Chlorobenzene	10														
Ethylbenzene	10														
Styrene	10														
Xylene (total)	10														

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank

TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #01
Site: Victoria Golf Course
Lab.: American Technical & Analytical Services (ATAS)
Reviewer: Dina David-Bailey, ESAT/Lockheed
Date: February 10, 1997

Analysis Type: Low Level Groundwater Samples for Semivolatiles

Concentration in µg/L

Station Location	GW-1-1			GW-2			GW-3-1			GW-4-1			GW-5-1			GW-9			GW-10-1		
Sample I.D.	YX322			YX323			YX324 BG			YX325 BG			YX326 D1			YX328			YX329		
Date of Collection	12/13/96			12/9/96			12/11/96			12/12/96			12/11/96			12/10/96			12/11/96		
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Phenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethyl)ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Chlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,3-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,4-Dichlorobenzene	5 L	J	A	10 U			10 U			10 U			10 U			10 U			10 U		
1,2-Dichlorobenzene	2 L	J	A	10 U			10 U			10 U			10 U			10 U			10 U		
2-Methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,2'-oxybis(1-Chloropropane)	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
N-Nitroso-di-n-propylamine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachloroethane	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Nitrobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Isophorone	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Nitrophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dimethylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethoxy)methane	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dichlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,2,4-Trichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Naphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chloroaniline	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorobutadiene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chloro-3-methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Methylnaphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorocyclopentadiene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4,6-Trichlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4,5-Trichlorophenol	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
2-Chloronaphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Nitroaniline	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
Dimethylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Acenaphthylene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,6-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
3-Nitroaniline	25 U			25 U			25 U			25 U			25 U			25 U			25 U		

Station Location	GW-1-1			GW-2			GW-3-1			GW-4-1			GW-5-1			GW-9			GW-10-1		
Sample I.D.	YX322			YX323			YX324 BG			YX325 BG			YX326 D1			YX328			YX329		
Date of Collection	12/13/96			12/9/96			12/11/96			12/12/96			12/11/96			12/10/96			12/11/96		
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Acenaphthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrophenol	25 U			25 U	J	C	25 U			25 U			25 U			25 U	J	C	25 U		
4-Nitrophenol	25 U			25 U		F	25 U			25 U			25 U			25 U			25 U		
Dibenzofuran	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Diethylphthalate	3 L	J	AG	10 U			0.6 L	J	AG	10 U			10 U			10 U			10 U		
4-Chlorophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Fluorene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Nitroaniline	25 U			25 U	J	C	25 U			25 U			25 U			25 U	J	C	25 U		
4,6-Dinitro-2-methylphenol	25 U	J	E	25 U			25 U			25 U			25 U	J	E	25 U			25 U		
N-Nitrosodiphenylamine	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U		
4-Bromophenyl phenyl ether	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U		
Hexachlorobenzene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U		
Pentachlorophenol	25 U	J	E	25 U		F	25 U			25 U			25 U	J	E	25 U			25 U		
Phenanthrene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U		
Anthracene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U		
Carbazole	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U		
Di-n-butylphthalate	7 L	J	AEG	10 U	J	B	57		G	21		G	2 L	J	AEG	1 L	J	AG	10 U		
Fluoranthene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U		
Pyrene	10 U	J	DE	10 U			10 U			10 U	J	D	10 U	J	E	10 U			10 U	J	D
Butylbenzylphthalate	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U		
3,3'-Dichlorobenzidine	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U		
Benzo(a)anthracene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U		
Chrysene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U		
bis(2-Ethylhexyl)phthalate	10 U	J	E	10 U			2 L	J	AG	1 L	J	AG	4 L	J	AEG	16		G	6 L	J	AG
Di-n-octylphthalate	10 U	J	DE	10 U			10 U			10 U	J	D	10 U	J	E	10 U			10 U	J	DE
Benzo(b)fluoranthene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U	J	E
Benzo(k)fluoranthene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U	J	E
Benzo(a)pyrene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U	J	E
Indeno(1,2,3-cd)pyrene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U	J	E
Dibenz(a,h)anthracene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U	J	E
Benzo(g,h,i)perylene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U	J	E

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #01
Site: Victoria Golf Course
Lab.: American Technical & Analytical Services (ATAS)
Reviewer: Dina David-Bailey, ESAT/Lockheed
Date: February 10, 1997

Analysis Type: Low Level Groundwater Samples for Semivolatiles

Concentration in µg/L

Station Location	GW-11			GW-12-1			GW-13-1			GW-14-1			GW-28-1			Method Blank			Method Blank		
Sample I.D.	YX330 EB			YX331 FB			YX332 EB			YX333 EB			YX363 D1			SBLKEA			SBLKEU		
Date of Collection	12/9/96			12/10/96			12/10/96			12/11/96			12/11/96								
Semivolatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Phenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethyl)ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Chlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,3-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,4-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,2-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,2'-oxybis(1-Chloropropane)	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
N-Nitroso-di-n-propylamine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachloroethane	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Nitrobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Isophorone	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Nitrophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dimethylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethoxy)methane	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dichlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,2,4-Trichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Naphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chloroaniline	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorobutadiene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chloro-3-methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Methylnaphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorocyclopentadiene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4,6-Trichlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4,5-Trichlorophenol	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
2-Chloronaphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Nitroaniline	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
Dimethylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Acenaphthylene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,6-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
3-Nitroaniline	25 U			25 U			25 U			25 U			25 U			25 U			25 U		

Station Location	GW-11			GW-12-1			GW-13-1			GW-14-1			GW-28-1			Method Blank			Method Blank		
Sample I.D.	YX330 EB			YX331 FB			YX332 EB			YX333 EB			YX363 D1			SBLKEA			SBLKEU		
Date of Collection	12/9/96			12/10/96			12/10/96			12/11/96			12/11/96								
Semivolatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Acenaphthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrophenol	25 U	J	C	25 U			25 U			25 U			25 U			25 U			25 U		
4-Nitrophenol	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
Dibenzofuran	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Diethylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chlorophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Fluorene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Nitroaniline	25 U	J	C	25 U			25 U			25 U			25 U			25 U			25 U		
4,6-Dinitro-2-methylphenol	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
N-Nitrosodiphenylamine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Bromophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Pentachlorophenol	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
Phenanthrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Carbazole	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Di-n-butylphthalate	0.5 L	J	AB	10 U			10 U			10 U			2 L	J	AG	10 U			10 U		
Fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Pyrene	10 U			10 U			10 U			10 U	J	D	10 U	J	D	10 U			10 U		
Butylbenzylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
3,3'-Dichlorobenzidine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(a)anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Chrysene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Ethylhexyl)phthalate	1 L	J	AB	10 U			10 U			10 U			3 L	J	AG	10 U			10 U		
Di-n-octylphthalate	10 U			10 U			10 U			10 U	J	D	10 U	J	D	10 U			0.5 L	J	AB
Benzo(b)fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(k)fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(a)pyrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Indeno(1,2,3-cd)pyrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Dibenz(a,h)anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(g,h,i)perylene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #01
Site: Victoria Golf Course
Lab.: American Technical & Analytical Services (ATAS)
Reviewer: Dina David-Bailey, ESAT/Lockheed
Date: February 10, 1997

Analysis Type: Low Level Groundwater Samples for Semivolatiles

Concentration in µg/L

Sample I.D.	CRQL																			
Semivolatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Phenol	10																			
bis(2-Chloroethyl)ether	10																			
2-Chlorophenol	10																			
1,3-Dichlorobenzene	10																			
1,4-Dichlorobenzene	10																			
1,2-Dichlorobenzene	10																			
2-Methylphenol	10																			
2,2'-oxybis(1-Chloropropane)	10																			
4-Methylphenol	10																			
N-Nitroso-di-n-propylamine	10																			
Hexachloroethane	10																			
Nitrobenzene	10																			
Isophorone	10																			
2-Nitrophenol	10																			
2,4-Dimethylphenol	10																			
bis(2-Chloroethoxy)methane	10																			
2,4-Dichlorophenol	10																			
1,2,4-Trichlorobenzene	10																			
Naphthalene	10																			
4-Chloroaniline	10																			
Hexachlorobutadiene	10																			
4-Chloro-3-methylphenol	10																			
2-Methylnaphthalene	10																			
Hexachlorocyclopentadiene	10																			
2,4,6-Trichlorophenol	10																			
2,4,5-Trichlorophenol	25																			
2-Chloronaphthalene	10																			
2-Nitroaniline	25																			
Dimethylphthalate	10																			
Acenaphthylene	10																			
2,6-Dinitrotoluene	10																			
3-Nitroaniline	25																			

Sample I.D.	CRQL																				
Semivolatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Acenaphthene	10																				
2,4-Dinitrophenol	25																				
4-Nitrophenol	25																				
Dibenzofuran	10																				
2,4-Dinitrotoluene	10																				
Diethylphthalate	10																				
4-Chlorophenyl phenyl ether	10																				
Fluorene	10																				
4-Nitroaniline	25																				
4,6-Dinitro-2-methylphenol	25																				
N-Nitrosodiphenylamine	10																				
4-Bromophenyl phenyl ether	10																				
Hexachlorobenzene	10																				
Pentachlorophenol	25																				
Phenanthrene	10																				
Anthracene	10																				
Carbazole	10																				
Di-n-butylphthalate	10																				
Fluoranthene	10																				
Pyrene	10																				
Butylbenzylphthalate	10																				
3,3'-Dichlorobenzidine	10																				
Benzo(a)anthracene	10																				
Chrysene	10																				
bis(2-Ethylhexyl)phthalate	10																				
Di-n-octylphthalate	10																				
Benzo(b)fluoranthene	10																				
Benzo(k)fluoranthene	10																				
Benzo(a)pyrene	10																				
Indeno(1,2,3-cd)pyrene	10																				
Dibenz(a,h)anthracene	10																				
Benzo(g,h,i)perylene	10																				

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

LOCKHEED MARTIN

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
L	Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

TABLE 2
Volatiles and Semivolatiles: Continuing Calibrations

Case No.: 25218 Memo #01
Site: Victoria Golf Course
Laboratory: American Technical & Analytical Services (ATAS)
Reviewer: Dina David-Bailey, ESAT/Lockheed
Date: February 10, 1997

PERCENT DIFFERENCES

VOLATILES

	%D
Analysis date/time:	12-17-96/1035
GC/MS I.D.:	D
Analyte	Cont.
trans-1,3-Dichloropropene	-36.8

ASSOCIATED SAMPLES AND BLANKS

Cont. 12-17-96/1035: YX322, YX324 through YX326, YX329, YX331 through YX333, YX363, VBLKDP, and VHBLKDP

SEMIVOLATILES

	%D
Analysis date/time:	12-31-96/1411
GC/MS I.D.:	E
Analyte	Cont.
Pyrene	-25.3
Di-n-octylphthalate	-28.4

ASSOCIATED SAMPLES

Cont. 12-31-96/1411: YX322, YX325, YX329, YX333, and YX363

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX322

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX323

Matrix: (soil/water) WATER Lab Sample ID: 17713.01

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: D7876.D

Level: (low/med) LOW Date Received: 12/14/96

% Moisture: not dec. _____ Date Analyzed: 12/17/96

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: ~~13~~ 12 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	78-78-4	Butane, 2-methyl-	5.576	54	NJ
~~2.~~	~~110-54-3~~	~~Hexane~~	~~8.852~~	~~6~~	~~NJ~~
3.	~~96-37-7~~	~~Cyclopentane, methyl-~~	9.756	7	NJ
4.	~~565-59-3~~	~~Pentane, 2,3-dimethyl-~~	10.710	17	NJ
5.	1638-26-2	Cyclopentane, 1,1-dimethyl-	10.945	17	NJ
6.	4516-69-2	Cyclopentane, 1,1,3-trimethy	12.217	8	NJ
7.	~~2613-69-6~~	~~Cyclopentane, 1,2,3-trimethy~~	12.805	6	NJ
8.	~~34462-28-7~~	~~Cyclopropane, trimethylmethy~~	13.005	10	NJ
9.	110-01-0	Thiophene, tetrahydro-	14.952	12	NJ
10.	4740-00-5	Thiophene, tetrahydro-3-methyl-	16.383	22	NJ
11.		Unknown	17.119	6	J
12.	~~1074-17-5~~	~~Benzene, 1-methyl-2-propyl-~~	18.521	10	NJ
13.	~~95-50-1~~	~~Benzene, 1,2-dichloro-~~	18.768	5	NJ
14.					
15.					
16.					
17.					
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19.					
20.					
21.					
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24.					
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27.					
28.					
29.					
30.					

2. Common laboratory contaminant
3., 4., 7., 8. Unknown hydrocarbon
12. and 13. Substituted benzene

HBB 1/28/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YX324

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX323

Matrix: (soil/water) WATER Lab Sample ID: 17703.02

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: D7875.D

Level: (low/med) LOW Date Received: 12/13/96

% Moisture: not dec. _____ Date Analyzed: 12/17/96

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: ~~3~~ 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	96-14-0	Pentane, 3-methyl-	8.432	38	NJ
~~2.~~	~~110-54-3~~	~~Hexane~~	~~8.861~~	~~1600~~	~~NJ~~
3.	~~96-37-7~~	~~Cyclopentane, methyl-~~	9.755	67	NJ
4.					
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13.					
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28.					
29.					
30.					

2. Common laboratory contaminant
3. Unknown hydrocarbon

HOB 1/28/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YX328

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX323

Matrix: (soil/water) WATER Lab Sample ID: 17669.09

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: D7829.D

Level: (low/med) LOW Date Received: 12/11/96

% Moisture: not dec. _____ Date Analyzed: 12/12/96

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	78-78-4	Butane, 2-methyl-	5.566	12	NJ
2.					
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FOB 1/28/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YX330

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX323

Matrix: (soil/water) WATER Lab Sample ID: 17669.08

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: D7828.D

Level: (low/med) LOW Date Received: 12/11/96

% Moisture: not dec. _____ Date Analyzed: 12/12/96

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: ~~2~~ 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~1825-61-2~~	~~Silane, methoxytrimethyl-~~	~~8.233~~	~~8~~	~~NJ~~
2.		Unknown	9.970	28	J
3.					
4.					
5.					
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27.					
28.					
29.					
30.					

1. Column bleed

HAB 1/28/97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YX322RE

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX323

Matrix: (soil/water) WATER Lab Sample ID: 17713.01

Sample wt/vol: 1000 (g/mL) ML Lab File ID: EE8154.D

Level: (low/med) LOW Date Received: 12/14/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted:12/16/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/31/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.9

Number TICs found: ~~26~~ 19

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~		~~UNKNOWN~~	~~4.452~~	~~36~~	~~J~~
~~2.~~	~~76-09-5~~	~~2,3-Butanediol, 2,3-dimethyl~~	~~4.621~~	~~31~~	~~J~~
~~3.~~	~~4740-00-5~~	~~Thiophene, tetrahydro-3-meth~~	~~4.845~~	~~13~~	~~NJ~~
~~4.~~		~~UNKNOWN~~	~~4.998~~	~~5~~	~~J~~
~~5.~~	~~590-67-0~~	~~Cyclohexanol, 1-methyl-~~	~~5.069~~	~~12~~	~~NJ~~
~~6.~~		~~UNKNOWN~~	~~5.096~~	~~16~~	~~J~~
7.		UNKNOWN	5.555	6	J
8.		UNKNOWN	6.282	6	J
9.		UNKNOWN	6.495	8	J
10.		UNKNOWN	6.539	13	J
11.		UNKNOWN	6.780	6	J
12.		UNKNOWN	6.960	8	J
13.	~~617-94-7~~	~~Benzenemethanol, .alpha.,.al~~	7.043	9	NJ
14.		UNKNOWN	7.382	11	J
15.		UNKNOWN	7.749	9	J
16.		UNKNOWN	7.903	6	J
17.		UNKNOWN	8.067	5	J
18.		UNKNOWN	8.177	8	J
19.		UNKNOWN	8.446	9	J
20.		UNKNOWN	9.072	8	J
21.		UNKNOWN	9.215	5	J
22.		UNKNOWN	9.462	12	J
23.		UNKNOWN	10.227	19	J
24.	88-19-7	Benzenesulfonamide, 2-methyl	11.648	12	NJ
25.	934-34-9	2(3H)-Benzothiazolone	11.974	38	NJ
~~26.~~	~~84-69-5~~	~~1,2-Benzenedicarboxylic acid~~	~~13.067~~	~~24~~	~~NJ~~
27.					
28.					
29.					
30.					

1.→6. eluted >30 seconds before phenol
13. Unknown aromatic
26. phthalate

000297

HOB 1/29/97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX323

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX323

Matrix: (soil/water) WATER Lab Sample ID: 17669.01

Sample wt/vol: 1000 (g/mL) ML Lab File ID: EE8260.D

Level: (low/med) LOW Date Received: 12/11/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted:12/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 01/17/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.2

Number TICs found: ~~14~~ 13 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.315~~	~~2~~	~~NJ~~
2.	65-85-0	Benzoic Acid	7.523	7	NJ
3.	95-16-9	Benzothiazole	8.383	3	NJ
4.	123-92-2	1-Butanol, 3-methyl-, acetate	9.678	15	NJ
5.		UNKNOWN	10.238	42	J
6.		UNKNOWN	10.402	4	J
7.		UNKNOWN	13.348	2	J
8.		UNKNOWN	13.517	2	J
9.		UNKNOWN	15.177	3	J
10.		UNKNOWN	16.151	3	J
11.	0-00-0	Tridecanol, 2-ethyl-2-methyl-	17.050	3	NJ
12.		UNKNOWN	17.580	4	J
13.		UNKNOWN	19.982	3	J
14.		UNKNOWN	20.856	5	J
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1. eluted >30 seconds before phenol

000335

Alkane Report for Sample : YX323 Page: 1

Data file : EE8260.d Matrix : WATER

	CAS #	Compound	R.T.	Estimated Conc.
	112-95-8	Eicosane	16.60	4
*	~~646-31-1~~	~~Tetracosane~~	17.50	5
		UNKNOWN ALKANE	18.00	3
		UNKNOWN ALKANE	18.57	6
*	~~75163-99-4~~	~~Nonadecane, 2,3-dimethyl-~~	19.22	4

Concentration Units: Water: UG/L Soil: UG/KG

* Unknown alkane

1/29/97

1-18-97

HKB 1/29/97 JP 1-19-97

000006

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX324

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX323

Matrix: (soil/water) WATER Lab Sample ID: 17703.02

Sample wt/vol: 1000 (g/mL) ML Lab File ID: EE8139.D

Level: (low/med) LOW Date Received: 12/13/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 12/16/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/30/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.5

Number TICs found: ~~18~~ 14 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.455~~	~~2~~	~~NJB~~
2.	112-34-5	Ethanol, 2-(2-butoxyethoxy)-	7.951	10	J
3.		Unknown	8.462	2	J
4.		UNKNOWN	8.560	2	J
5.		UNKNOWN	8.680	3	J
6.		UNKNOWN	10.819	13	J
7.		UNKNOWN	11.501	3	J
8.	19097-77-9	~~Phosphoric acid, methylsilyl~~	12.249	12	NJ
9.		UNKNOWN	12.718	3	J
~~10.~~	~~57-10-3~~	~~Hexadecanoic acid~~	~~13.493~~	~~5~~	~~NJB~~
11.		UNKNOWN	14.318	2	J
12.		UNKNOWN	14.455	12	J
13.		UNKNOWN	14.635	2	J
14.		UNKNOWN	14.767	2	JB
~~15.~~		~~UNKNOWN~~	~~14.833~~	~~12~~	~~JB~~
16.	~~80-05-7~~	~~Phenol, 4,4'-(1-methylethyli~~	15.041	11	NJ
~~17.~~		~~UNKNOWN~~	~~15.774~~	~~16~~	~~JB~~
18.		UNKNOWN	21.220	12	J
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1. eluted >30 secs. before phenol

8. Phosphoric acid, methylsilylene P,P'-bis(2-ethylhexyl) ester

10., 15., and 17. found in the associated method blank

16. Unknown

000364

HDB 1/29/97

Alkane Report for Sample : 1X324 Page: 1

Data file : EE8139.d Matrix : WATER

CAS #	Compound	R.T.	Estimated Conc.
~~* 593-45-3~~	~~Octadecane~~	~~17.20~~	~~5~~
~~* 629-92-5~~	~~Nonadecane~~	~~18.20~~	~~12~~
112-95-8	Eicosane	18.80	12
55282-15-0	Docosane, 7-butyl-	19.49	13
1560-96-9	Tridecane, 2-methyl-	20.29	16
1560-84-5	Eicosane, 2-methyl-	22.29	16
	UNKNOWN ALKANE	23.60	15

Concentration Units: Water: UG/L Soil: UG/KG

* found in the associated method blank

EE 1/3/97

HAB 1/29/97

JP 1-19-97

000007

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX325

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX323

Matrix: (soil/water) WATER Lab Sample ID: 17703.12

Sample wt/vol: 1000 (g/mL) ML Lab File ID: EE8152.D

Level: (low/med) LOW Date Received: 12/13/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 12/16/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/31/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICs found: ~~14~~ 11

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.438~~	~~3~~	~~JB~~
2.		UNKNOWN	10.794	8	J
3.		UNKNOWN	11.480	3	J
4.	19097-77-9	~~Phosphoric acid, methylsilyl~~	12.226	6	NJ
5.	~~142-50-7~~	~~1,6,10-Dodecatrien-3-ol, 3,7~~	13.986	5	NJ
6.		UNKNOWN	14.434	22	J
7.		UNKNOWN	14.734	2	J
8.		UNKNOWN	14.784	7	JB
~~9.~~		~~UNKNOWN~~	~~14.811~~	~~11~~	~~JB~~
10.		~~UN KNOWN~~ Unknown	15.123	8	J
11.		UNKNOWN	15.654	4	J
~~12.~~		~~UNKNOWN~~	~~15.753~~	~~11~~	~~JB~~
13.	~~1740-19-8~~	~~1-Phenanthrenecarboxylic aci~~	15.928	6	NJ
14.		UNKNOWN	16.196	11	J
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1. eluted >30 seconds before phenol
4. Phosphoric acid, methylsilylene P,P'-bis(2-ethylhexyl) ester
5. Dodecatriene
9. and 12. found in the associated method blank
13. Carboxylic acid

000402

HDB 1/29/97

Alkane Report for Sample : 1X325 Page: 1

Data file : EE8152.d Matrix : WATER

RPL 1/6/97

CAS #	Compound	R.T.	Estimated Conc.
	UNKNOWN ALKANE	16.27	4
0-00-0	2-Methyloctadecane	16.74	5
* ~~629-99-2~~	~~Pentacosane~~	~~17.18~~	~~5~~
112-95-8	Eicosane	17.65	5
* ~~1560-86-7~~	~~Nonadecane, 2-methyl-~~	~~18.18~~	~~8~~
593-45-3	Octadecane	18.77	8
1560-89-0	Heptadecane, 2-methyl-	19.45	8
7098-22-8	Tetratetracontane	20.25	8
	UNKNOWN ALKANE	21.17	9
	UNKNOWN ALKANE	22.26	7

Concentration Units: Water: UG/L Soil: UG/KG

* found in the associated method blank

1-7-97 RPL

HAB 1/29/97

JP 1-19-97

000008

1F

EPA SAMPLE NO.

YX326

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX323

Matrix: (soil/water) WATER Lab Sample ID: 17703.05

Sample wt/vol: 1000 (g/mL) ML Lab File ID: EE8142.D

Level: (low/med) LOW Date Received: 12/13/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted:12/16/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/30/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.6

Number TICs found: ~~8~~ 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.458~~	~~3~~	~~NJB~~
2.	~~112-60-7~~	~~Ethanol, 2,2'-[oxybis(2,1-et~~	7.979	3	NJ
3.		UNKNOWN	11.762	5	J
~~4.~~	~~57-10-3~~	~~Hexadecanoic acid~~	~~13.502~~	~~3~~	~~JB~~
~~5.~~		~~UNKNOWN~~	~~13.688~~	~~5~~	~~JB~~
~~6.~~		~~UNKNOWN~~	~~14.836~~	~~8~~	~~JB~~
7.		UNKNOWN	15.049	4	J
~~8.~~		~~UNKNOWN~~	~~15.780~~	~~14~~	~~JB~~
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
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19.					
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23.					
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27.					
28.					
29.					
30.					

1. eluted >30 seconds before phenol
2. Unknown
4.→6. and 8. found in the associated method blank

KOB 1/29/97

Alkane Report for Sample : YX326 Page: 1

Data file : EE8142.d Matrix : WATER

CAS #	Compound	R.T.	Estimated Conc.
593-45-3	Octadecane	17.68	5
*	~~UNKNOWN ALKANE~~	~~18.21~~	~~8~~
112-95-8	Eicosane	18.80	7
~~1120-21-4~~	~~Undecane~~ Unknown alkane	19.49	7
	UNKNOWN ALKANE	22.31	10

Concentration Units: Water: UG/L Soil: UG/KG

* found in the associated method blank

1/2/3/97

MMB 1/29/97

JP 1-19-97

000009

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX328

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX323

Matrix: (soil/water) WATER Lab Sample ID: 17669.09

Sample wt/vol: 1000 (g/mL) ML Lab File ID: EE8265.D

Level: (low/med) LOW Date Received: 12/11/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted:12/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 01/17/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.4

Number TICs found: ~~5~~ 7

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.304~~	~~3~~	~~NJ~~
~~2.~~		~~UNKNOWN~~	~~5.153~~	~~3~~	~~J~~
3.		UNKNOWN	5.294	2	J
4.		UNKNOWN	5.903	5	J
5.		UNKNOWN	13.519	3	J
6.		UNKNOWN	15.424	3	J
7.	~~4602-84-0~~	~~2,6,10-Dodecatrien-1-ol, 3,7~~	17.774	5	NJ
8.					
9.					
10.					
11.					
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30.					

1. and 2. eluted >30 seconds before phenol

7. Unknown

000484

HBB 1/29/97

Alkane Report for Sample : YX328 Page: 1

Data file : EE8265.d Matrix : WATER

CAS #	Compound	R.T.	Estimated Conc.
	UNKNOWN ALKANE	16.14	3
544-85-4	Dotriacontane	17.04	5
112-95-8	Eicosane	17.50	4
	UNKNOWN ALKANE	18.00	4

Concentration Units: Water: UG/L Soil: UG/KG

HOB 1/29/97

JP 1-19-97

000011

1F

EPA SAMPLE NO.

YX329RE

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX323

Matrix: (soil/water) WATER Lab Sample ID: 17703.01

Sample wt/vol: 1000 (g/mL) ML Lab File ID: EE8156.D

Level: (low/med) LOW Date Received: 12/13/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 12/16/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/31/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.7

Number TICs found: ~~16~~ 7

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.440~~	~~3~~	~~JB~~
2.	617-94-7	~~Benzenemethanol, .alpha.,.al~~	7.045	2	J
~~3.~~		~~UNKNOWN~~	~~13.480~~	~~2~~	~~J~~
~~4.~~		~~UNKNOWN~~	~~13.660~~	~~3~~	~~JB~~
5.		UNKNOWN	14.441	15	J
~~6.~~		~~UNKNOWN~~	~~14.813~~	~~10~~	~~JB~~
7.		UNKNOWN	14.907	4	JB
8.		UNKNOWN	15.016	7	J
9.		UNKNOWN	15.656	4	J
~~10.~~		~~UNKNOWN~~	~~15.755~~	~~12~~	~~JB~~
11.	1740-19-8	~~1-Phenanthrenecarboxylic aci~~	15.924	4	NJ
12.		UNKNOWN	16.192	5	J
~~13.~~	~~7225-64-1~~	~~Heptadecane, 9-octyl-~~	~~16.739~~	~~4~~	~~NJ~~
~~14.~~	~~544-76-3~~	~~Hexadecane~~	~~17.188~~	~~4~~	~~NJ~~
~~15.~~	~~112-95-8~~	~~Eicosane~~	~~17.658~~	~~4~~	~~NJ~~
~~16.~~	~~629-92-5~~	~~Nonadecane~~	~~18.183~~	~~8~~	~~NJ~~
17.					
18.					
19.					
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22.					
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30.					

1. eluted >30 seconds before phenol
2. Benzenemethanol, .alpha., .alpha.-dimethyl-
3., 4., 9., and 10. found in the associated method blank
11. 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,9,10,10a-octahydro-1,4a-dimethyl-7-prop

1/29/97

000532

13. → 16. See alkane report

Alkane Report for Sample : 1X329RE Page: 1

RB, 1-8-97

Data file : EE8156.d Matrix : WATER

RM 1/6/97

	CAS #	Compound	R.T.	Estimated Conc.
	7225-64-1	Heptadecane, 9-octyl-	16.73	4
*	~~544-76-3~~	~~Hexadecane~~	~~17.18~~	~~4~~
	112-95-8	Eicosane	17.65	4
*	~~629-92-5~~	~~Nonadecane~~	~~18.18~~	~~8~~

Concentration Units: Water: UG/L Soil: UG/KG

* found in the associated method blank

1-8-97
RL

HMB 1/24/97

JP
1-19-97

000013

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YX330

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX323

Matrix: (soil/water) WATER Lab Sample ID: 17669.08

Sample wt/vol: 1000 (g/mL) ML Lab File ID: EE8263.D

Level: (low/med) LOW Date Received: 12/11/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted:12/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 01/17/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 9.6

Number TICs found: ~~4~~ 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.309~~	~~2~~	~~NJ~~
2.	57-10-3	Hexadecanoic acid	13.344	4	NJ
3.		UNKNOWN	13.519	3	J
4.		UNKNOWN	17.773	13	J
5.					
6.					
7.					
8.					
9.					
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11.					
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16.					
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23.					
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26.					
27.					
28.					
29.					
30.					

1. eluted >30 secs. before phenol

000556

1/29/97

Data file : EE8140.d Matrix : WATER

CAS #	Compound	R.T.	Estimated Conc.
638-36-8	Hexadecane, 2,6,10,14-tetramethyl-	16.75	3
~~*629-59-4~~	~~Tetradecane~~	~~17.20~~	~~2~~
638-67-5	Tricosane	17.67	3

Concentration Units: Water: UG/L Soil: UG/KG

* found in the associated method blank

2-4-97
RB

HRB 2/7/97

000013A
RB 2-5-97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX332

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX323

Matrix: (soil/water) WATER Lab Sample ID: 17703.04

Sample wt/vol: 1000 (g/mL) ML Lab File ID: EE8141.D

Level: (low/med) LOW Date Received: 12/13/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 12/16/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/30/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.7

Number TICs found: ~~5~~ 8

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.454~~	~~2~~	~~NJB~~
~~2.~~		~~UNKNOWN~~	~~13.685~~	~~2~~	~~JB~~
3.		UNKNOWN	14.458	6	J
~~4.~~		~~UNKNOWN~~	~~14.834~~	~~9~~	~~JB~~
5.		UNKNOWN	15.042	3	J
6.		UNKNOWN	15.527	4	J
7.		UNKNOWN	15.680	5	JB
~~8.~~		~~UNKNOWN~~	~~15.773~~	~~16~~	~~JB~~
9.		UNKNOWN	15.953	4	J
10.					
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27.					
28.					
29.					
30.					

1. eluted >30 seconds before phenol
2., 4., and 8. found in the associated method blank

000584

HBB 1/29/97

Alkane Report for Sample : 1X332 Page: 1

Data file : EE8141.d Matrix : WATER

	CAS #	Compound	R.T.	Estimated Conc.
		UNKNOWN ALKANE	16.76	3
*		UNKNOWN ALKANE	17.20	3
		UNKNOWN ALKANE	17.68	4

Concentration Units: Water: UG/L Soil: UG/KG

* found in the associated method blank

2-4-97

2/7/97

000014

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YX333

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX323

Matrix: (soil/water) WATER Lab Sample ID: 17703.07

Sample wt/vol: 1000 (g/mL) ML Lab File ID: EE8149.D

Level: (low/med) LOW Date Received: 12/13/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted:12/16/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/31/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.2

Number TICs found: ~~8~~ 1

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.437~~	~~3~~	~~JB~~
~~2.~~		~~UNKNOWN~~	~~13.665~~	~~3~~	~~JB~~
~~3.~~		~~UNKNOWN~~	~~14.814~~	~~6~~	~~JB~~
4.		UNKNOWN	15.659	2	J
~~5.~~		~~UNKNOWN~~	~~15.757~~	~~9~~	~~JB~~
~~6.~~		~~UNKNOWN~~	~~17.943~~	~~5~~	~~JB~~
7.					
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1. eluted >30 seconds before phenol
2., 3., 5., and 6. found in the associated method blank

HDD 1/29/97

000603

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YX363

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX323

Matrix: (soil/water) WATER Lab Sample ID: 17703.06

Sample wt/vol: 1000 (g/mL) ML Lab File ID: EE8158.D

Level: (low/med) LOW Date Received: 12/13/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted:12/16/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/31/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: ~~11~~ 5

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.433~~	~~3~~	~~NJB~~
2.		UNKNOWN	6.042	4	J
3.	95-16-9	Benzothiazole	8.516	2	NJ
~~4.~~	~~544-63-8~~	~~Tetradecanoic acid~~	~~13.476~~	~~7~~	~~NJ~~
~~5.~~		~~UNKNOWN~~	~~13.661~~	~~4~~	~~JB~~
6.	57-11-4	Octadecanoic acid	14.611	3	NJ
~~7.~~		~~UNKNOWN~~	~~14.813~~	~~5~~	~~JB~~
~~8.~~		~~UNKNOWN~~	~~15.753~~	~~7~~	~~JB~~
~~9.~~	~~603-11-2~~	~~1,2 Benzenedicarboxylic acid~~	~~16.649~~	~~11~~	~~NJ~~
10.	~~4128-17-0~~	~~2,6,10-Dodecatrien-1-ol, 3,7~~	17.936	10	NJ
11.		UNKNOWN	18.029	4	JB
12.					
13.					
14.					
15.					
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17.					
18.					
19.					
20.					
21.					
22.					
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30.					

1. eluted 730 seconds before phenol.
4., 5., 7., and 8. found in the associated method blank
9. phthalate
10. Unknown

000616

Alkane Report for Sample : 1X363 Page: 1

Data file : EE8158.d Matrix : WATER

CAS #	Compound	R.T.	Estimated Conc.
	UNKNOWN ALKANE	15.31	4
629-92-5	Nonadecane	16.74	7
* ~~112-95-8~~	~~Eicosane~~	~~17.18~~	~~8~~
13287-23-5	Heptadecane, 8-methyl-	17.65	10
* ~~638-67-5~~	~~Tricosane~~	~~18.18~~	~~25~~
630-03-5	Nonacosane	18.77	25
629-99-2	Pentacosane	19.45	28
630-06-8	Hexatriacontane	20.24	28
13287-24-6	Nonadecane, 9-methyl-	21.16	32
55333-99-8	Eicosane, 7-hexyl-	22.25	25
646-31-1	Tetracosane	23.52	24
3386-33-2	Octadecane, 1-chloro-	25.03	25

RPM 1/6/97

Concentration Units: Water: UG/L Soil: UG/KG

* found in the associated method blank

1-8-97
RK

NAB 1/29/97 1-19-97 JP

000013B

LOCKHEED MARTIN

TPO: [ ]FYI [X]Attention [ ]Action Region 9

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25218 Memo #01 LABORATORY ATAS

SDG NO. YX323 SITE NAME Victoria Golf Course

SOW OLM03.2 REVIEW COMPLETION DATE February 10, 1997

REVIEWER [ ] ESD [X] ESAT REVIEWER'S NAME Dina David-Bailey

NO. OF SAMPLES 12 WATER _____ SOIL _____ OTHER

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES/PRESERVATION	O	O		
2. GC-MS TUNE	O	O		
3. INITIAL CALIBRATIONS	O	X		
4. CONTINUING CALIBRATIONS	X	X		
5. FIELD QC	X	X		
6. LABORATORY BLANKS	X	O		
7. SURROGATES	O	O		
8. MATRIX SPIKE/DUPLICATES	O	O		
9. REGIONAL QC	N/A	N/A		
10. INTERNAL STANDARDS	O	X		
11. COMPOUND IDENTIFICATION	O	O		
12. COMPOUND QUANTITATION	O	O		
13. SYSTEM PERFORMANCE	O	O		
14. OVERALL ASSESSMENT	X	X		

O = Data have no problems or problems that do not affect data quality.
X = Data are qualified due to minor problems.
M = Data are qualified due to major problems.
Z = Data are unacceptable.
N/A = Not Applicable

TPO ACTION: None.

TPO ATTENTION: (1) Several volatile results are qualified as nondetected and estimated (U,J) due to contamination in the storage blank. (2) Several results are estimated (J) due to calibration problems. (3) Several semivolatile results are estimated (J) due to low internal standard areas.

AREAS OF CONCERN: None.

LOCKHEED MARTIN

In Reference to Case No(s).:
25218 Memo #01

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: January 31, 1997

Laboratory Name: ATAS

Lab Contact: Ruseal Brewer

Region: 9

Regional Contact: Dina David-Bailey, ESAT/Lockheed

Call Initiated By: _____ Laboratory __X__ Region

In reference to data for the following sample(s):
YX322 through YX326, YX328 through YX333, and YX363 (SDG No. YX323)

Summary of Questions/Issues Discussed:

SEMIVOLATILES

1. The instrument performance check data for the 12/27/96 @ 1400 run were not included in the data package. Although not associated with this SDG, note that the instrument performance check data for the 12/27/96 @ 1029 were included in the data package. Please provide the missing data.

2. Sample mass spectrum for a tentatively identified alkane at a retention time (RT) of 19.49 minutes was not provided for sample YX326. The alkane report for sample YX326 (see page 000009) lists the alkane as undecane, CAS # 1120-21-4. Please clarify.

3. Sample mass spectrum for tetradecane at RT=17.20 minutes was provided (see page 580) for sample YX331. However, this alkane was not included in the alkane report for sample YX331. Please clarify.

4. Sample mass spectrum for alkanes were provided on pages 598-600 for sample YX332. However, no alkane report was submitted for sample YX332. Please clarify.

Summary of Resolution:

1. The laboratory provided the missing instrument performance check data.

2. The laboratory provided the missing sample mass spectrum.

3.-4. The laboratory provided the alkane reports as requested.

Dina David-Bailey
Signature

2-10-97
Date

Distribution: (1) Lab Copy, (2) Region Copy, (3) CLASS Copy

LOCKHEED MARTIN

Contract Laboratory Program
REGION 9/LABORATORY COMMUNICATION SYSTEM
CSF COMPLETENESS EVIDENCE AUDIT PROGRAM
Telephone Communication Summary Form

AUDIT NO.: 2/97/13
CASE NO.: 25218 Memo #01
SDG NO.: YX323
FILENAME: 25218M01.TCS

LAB CONTACT: Ruseal Brewer
LAB CODE: ATAS
LAB NAME: American Technical & Analytical Services
LAB LOCATION: Maryland Heights, MO

Summary of Questions/Issues Discussed:

(1) The Form DC-1 (Sample Log-In Sheet) on page 861 should be corrected and resubmitted for the following items:

(a) Item 11 (Time Received) should also list 1400, in addition to 0845. Samples YX332 and YX326 were received 12/13/96 @ 1400 according to chain-of-custody form 366647; and

(b) The "Remarks" column should indicate a cooler temperature of 5°C starting from sample YX363 down to sample YX325.

(2) Please correct and resubmit a corrected last page of the Form DC-2 for the following items:

(a) Incorrect year (1996 instead of 1997) was entered by the QA assistant; and

(b) No date was entered by the document control officer.

Summary of Resolution:

(1) The laboratory resubmitted a corrected Form DC-1.

(2) The laboratory resubmitted a corrected last page of the Form DC-2.

Heredina David-Barley
Auditor, ESAT/Lockheed

1-31-97
Date of Contact

Distribution: (1) Lab Copy, (2) Region Copy, (3) CLASS Copy

LOCKHEED MARTIN

Lockheed Martin Environmental Services
Environmental Services Assistance Team, Region 9
301 Howard Street, Suite 970, San Francisco, CA 94105-2241
Phone: 415-278-0570 Fax: 415-278-0588

4160 | 5013

cc: PI see/5013 2/26/97

2/25/97

MEMORANDUM

TO: Rachel Loftin
Site Assessment Manager
States Planning & Assessment Office, SFD-5

THROUGH: Rose Fong Rose
ESAT Regional Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Jack Berges
Team Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68D60005
Work Assignment No.: 9-96-0-4
Technical Direction No.: 9604116

DATE: February 21, 1997

SUBJECT: Review of Analytical Data

Attached are comments resulting from ESAT Region 9 validation of the following analytical data:

SITE:	Victoria Golf Course
SITE ACCOUNT NO.:	ZZ
CERCLIS ID NO.:	CAD980818926
CASE NO.:	25268 Memo #01
SDG NO.:	YX354
LABORATORY:	Southwest Labs of Oklahoma, Inc. (SWOK)
ANALYSIS:	Volatiles and Semivolatiles
SAMPLES:	4 Water and 3 Soil Samples (see Case Summary)
COLLECTION DATE:	January 8, 1997
REVIEWER:	Adriane Scheele, ESAT/Lockheed

The comments and qualifications presented in this report have been reviewed and approved by the EPA Work Assignment Manager (WAM) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Deirdre O'Leary (ESAT/Lockheed) at (415) 278-0585 or Rose Fong (QA Office/EPA) at (415) 744-1534.

Attachment

cc: Ray Flores, TPO USEPA Region 6

TPO: [ ]FYI [X]Attention [ ]Action

SAMPLING ISSUES: [X]Yes [ ]No

97-02-21-AS-02/25268M01.RPT

LOCKHEED MARTIN

Data Validation Report

Case No.: 25268 Memo #01
Site: Victoria Golf Course
Laboratory: Southwest Labs of Oklahoma, Inc. (SWOK)
Reviewer: Adriane Scheele, ESAT/Lockheed
Date: February 21, 1997

I. Case Summary

SAMPLE INFORMATION:

VOA and BNA Samples:	**Water**: YX327, YX334, YX335, and YX336 **Soil**: YX349, YX353, and YX354
Concentration and Matrix:	Low Level Groundwater and Soil
Analysis:	Volatiles and Semivolatiles
SOW:	OLM03.2
Collection Date:	January 8, 1997
Sample Receipt Date:	January 10, 1997
Extraction Date:	January 10, 1997
VOA Analysis Date:	January 13, 16, 17, and 21, 1997
BNA Analysis Date:	January 17, 1997

FIELD QC:

Trip Blanks (TB):	None
Field Blanks (FB):	None
Equipment Blanks (EB):	YX334 and YX335
Background Samples (BG):	None
Field Duplicates (D1):	YX327 and YX336

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLK1:	YX349, YX353, YX353MS, YX353MSD, and YX354
VBLK2:	YX327, YX327MS, YX327MSD, and YX334
VBLK3:	YX335 and YX336
VBLK4:	VHBLK1
SBLK1:	YX327, YX327MS, YX327MSD, YX335, and YX336
SBLK2:	YX349, YX353, YX354, YX354DL, YX354MS, and YX354MSD
SBLK3:	YX334 and YX336RE

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review

TPO ACTION:

None.

TPO ATTENTION:

(1) Several results for volatile and semivolatile target analytes are qualified as nondetected and estimated (U,J) due to contamination in laboratory blanks. (2) Several results for volatile and semivolatile target analytes are estimated (J) due to calibration problems. (3) Several results for semivolatile target analytes in one of the method blanks are estimated (J) due to a low internal standard response.

SAMPLING ISSUES:

A soil sample was not designated for quality control (QC) analysis on any of the chain of custody forms.

DL-Dilution; MS-Matrix Spike; MSD-Matrix Spike Duplicate;
RE-Reextraction; VHBLK-Storage Blank

ADDITIONAL COMMENTS:

A temperature of 1°C was measured in the coolers containing all of the samples of this sample delivery group (SDG) which were received at the laboratory on January 10, 1997. This temperature does not meet the 4°C ±2°C sample preservation criterion.

The Tentatively Identified Compounds (TICs) found in the samples are reported on the Form 1Es, 1Fs, and alkane reports included in this report. No TICs were detected in the volatile fraction of samples YX327, YX334, and YX335 and the semivolatile fraction of sample YX334.

This report was prepared according to the USEPA Contract Laboratory Program (CLP) Statement of Work (SOW) for Organic Analysis, OLM03.2, and the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

II. Validation Summary

	VOA Acceptable/Comment		BNA Acceptable/Comment	
HOLDING TIMES	[YES]	[ ]	[YES]	[ ]
GC/MS TUNE/GC PERFORMANCE	[YES]	[ ]	[YES]	[ ]
CALIBRATIONS	[NO]	[D]	[NO]	[E]
FIELD QC	[YES]	[ ]	[NO]	[C]
LABORATORY BLANKS	[NO]	[B]	[NO]	[C]
SURROGATES	[YES]	[ ]	[YES]	[ ]
MATRIX SPIKE/DUPLICATES	[YES]	[G]	[YES]	[G]
INTERNAL STANDARDS	[YES]	[ ]	[NO]	[F]
COMPOUND IDENTIFICATION	[YES]	[H]	[YES]	[H]
COMPOUND QUANTITATION	[YES]	[A,I]	[YES]	[A]
SYSTEM PERFORMANCE	[YES]	[ ]	[YES]	[ ]

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The detected results for the following volatile target analytes are qualified as nondetected and estimated due to laboratory blank contamination. The results are flagged "U,J" in Table 1A.

- Methylene chloride in samples YX349 and YX353
- Acetone in samples YX327, YX349, and YX353

Methylene chloride was found in laboratory method blank VBLK4 and storage blank VHBLK1; and acetone was found in storage blank VHBLK1. (See Table 1A for concentrations.) The results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

Although 1,2-dichloroethane and trichloroethene were found in equipment blanks YX334 and YX335 and chloroform was found in laboratory method blank VBLK2, no data are qualified because these analytes were not found in any of the samples.

A laboratory method blank is laboratory reagent water or baked sand for solid matrices analyzed with all reagents, surrogates, and internal standards and carried through the same sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during extraction and analysis.

A storage blank is laboratory reagent water stored in a vial in the same area as the field samples. The storage blank is used to determine the level of contamination introduced by the laboratory during sample storage prior to analysis.

C. The detected results for the following semivolatile target analytes are qualified as nondetected and estimated due to laboratory and equipment blank contamination. The results are flagged "U,J" in Table 1A.

- Di-n-butylphthalate in samples YX327, YX336, and YX354
- bis(2-Ethylhexyl)phthalate in samples YX327, YX336, and YX353

Di-n-butylphthalate and bis(2-ethylhexyl)phthalate were found in equipment blank YX335. Also, bis(2-ethylhexyl)phthalate was found in laboratory method blank SBLK2. (See Table 1A for concentrations.) The results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

Although diethylphthalate, di-n-butylphthalate, and bis(2-ethyl-hexyl)phthalate were found in laboratory method blank SBLK3, no data are qualified because the associated sample is equipment blank YX334.

An equipment blank is clean water that has been collected as a sample using decontaminated sampling equipment. The intent of an equipment blank is to monitor for contamination introduced by the sampling activity, although any laboratory introduced contamination will also be present.

D. The quantitation limits for the following volatile target analyte are estimated due to a large percent difference (%D) in the continuing calibration. The results are flagged "J" in Table 1A.

- Bromoform in samples YX335, YX336, and method blank VBLK3

A %D of 26.4 was observed for bromoform in the continuing calibration performed January 17, 1997. This value exceeds the ±25.0% QC advisory validation criterion.

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

E. The quantitation limits for the following semivolatile target analytes are estimated due to large percent differences (%Ds) in the continuing calibration. The results are flagged "J" in Table 1A.

- 2,4-Dinitrophenol, 4-nitrophenol, 2,4-dinitrotoluene, and 4-nitroaniline in samples YX349, YX353, YX354, and method blank SBLK3

Percent differences of -31.2, -39.9, -25.4, and -28.6 were observed for 2,4-dinitrophenol, 4-nitrophenol, 2,4-dinitrotoluene, and 4-nitroaniline, respectively, in the continuing calibration performed January 17, 1997. These values exceed the ±25.0% QC advisory validation criterion.

F. The quantitation limits for the following analytes are estimated due to a low internal standard area. The results are flagged "J" in Table 1A.

- Di-n-octylphthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene, and benzo(g,h,i)perylene in method blank SBLK3

The internal standard area for method blank SBLK3 fell below the QC advisory criterion, as shown below.

Sample	Internal Standard	Area	QC Limits
SBLK3	Perylene-d_{12}	430195	600658-2402634

The quantitation limits for the analytes listed above are considered quantitatively questionable. Since the results are nondetected, false negatives may exist.

Internal standards, introduced into every calibration standard, blank, sample, and QC sample, monitor changes in analyte response due to matrix effects and fluctuations in instrument sensitivity throughout the analytical sequence. Internal standards are used to quantitate the concentration of target analytes and surrogate standards.

G. The matrix spike and matrix spike duplicate results and relative percent differences (RPDs) for the analytes listed below in water QC samples YX327MS and YX327MSD and soil QC samples YX353MS, YX353MSD, YX354MS, and YX354MSD did not meet the criteria for accuracy and precision specified in the SOW. The recoveries and RPDs are presented below. The outliers are flagged with an asterisk (*).

Analyte	YX327MS %Recovery	YX327MSD %Recovery	RPD	QC limits RPD	QC limits %Recovery
Benzene	122	98	22*	11	76-127
N-Nitroso-di-n-propylamine	38*	38*	0	38	41-116
1,2,4-Trichloro-benzene	40	38*	5	28	39-98
Acenaphthene	42*	40*	5	31	46-118

Analyte	YX353MS %Recovery	YX353MSD %Recovery	RPD	QC limits RPD	QC limits %Recovery
1,1-Dichloroethene	92	73	23*	22	59-172
Toluene	127	102	22*	21	59-139

Analyte	YX354MS %Recovery	YX354MSD %Recovery	RPD	QC limits RPD	QC limits %Recovery
2,4-Dinitrotoluene	86	95*	10	47	28-89
Pyrene	76	24*	104*	36	35-142

The results obtained may indicate poor laboratory technique, sample nonhomogeneity for soils, or matrix effects which may interfere with accurate analysis. Since the RPDs for 1,1-dichloroethene and toluene are only slightly outside the QC limits, no adverse effect on the quality of the data is expected. Although the recovery for 2,4-dinitrotoluene in QC sample YX354MSD is above the QC limit, this recovery does not indicate an analytical deficiency. The effect of the high RPDs for benzene and pyrene and low recoveries for N-nitroso-di-n-propylamine, 1,2,4-trichlorobenzene, acenaphthene, and pyrene on the quality of the data is not known.

Matrix spike sample analysis provides information about the effect of the sample matrix on sample preparation and measurement.

H. Although not detected in any associated blanks, acetone, 2-butanone, and phthalates have been commonly found as contaminants in the field and in many laboratories. The user should note that the analytes listed below may be artifacts.

- Acetone in sample YX354
- 2-Butanone in samples YX349 and YX354
- Dimethylphthalate, bis(2-ethylhexyl)phthalate, and di-n-octylphthalate in sample YX349
- Diethylphthalate in samples YX327, YX336, and YX354

I. The volatile fraction of sample YX354 was analyzed at a 5-fold dilution due to high levels of target analytes. The CRQLs listed for the volatile fraction of sample YX354 in Table 1A have been multiplied by the dilution factor.

ANALYTICAL RESULTS

TABLE 1A

Case No.: 25268 Memo #01

Site: Victoria Golf Course

Lab.: Southwest Labs of Oklahoma, Inc. (SWOK)

Reviewer: Adriane Scheele, ESAT/Lockheed

Date: February 21, 1997

Analysis Type: Low Level Groundwater Samples for Volatiles

Concentration in µg/L

Station Location	GW-8-1			GW-15-1			GW-16-1			GW-17-1			Method Blank		
Sample I.D.	YX327 D1			YX334 EB			YX335 EB			YX336 D1			VBLK2		
Date of Collection	1/8/97			1/8/97			1/8/97			1/8/97					
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	10 U			10 U			10 U			10 U			10 U		
Bromomethane	10 U			10 U			10 U			10 U			10 U		
Vinyl chloride	10 U			10 U			10 U			10 U			10 U		
Chloroethane	10 U			10 U			10 U			10 U			10 U		
Methylene chloride	10 U			10 U			10 U			10 U			10 U		
Acetone	17 U	J	B	10 U			10 U			10 U			10 U		
Carbon disulfide	10 U			10 U			10 U			10 U			10 U		
1,1-Dichloroethene	10 U			10 U			10 U			10 U			10 U		
1,1-Dichloroethane	10 U			10 U			10 U			10 U			10 U		
1,2-Dichloroethene (total)	10 U			10 U			10 U			10 U			10 U		
Chloroform	10 U			10 U			10 U			10 U			1 L	J	AB
1,2-Dichloroethane	10 U			11		B	10		B	10 U			10 U		
2-Butanone	10 U			10 U			10 U			10 U			10 U		
1,1,1-Trichloroethane	10 U			10 U			10 U			10 U			10 U		
Carbon tetrachloride	10 U			10 U			10 U			10 U			10 U		
Bromodichloromethane	10 U			10 U			10 U			10 U			10 U		
1,2-Dichloropropane	10 U			10 U			10 U			10 U			10 U		
cis-1,3-Dichloropropene	10 U			10 U			10 U			10 U			10 U		
Trichloroethene	10 U			6 L	J	AB	10		B	10 U			10 U		
Dibromochloromethane	10 U			10 U			10 U			10 U			10 U		
1,1,2-Trichloroethane	10 U			10 U			10 U			10 U			10 U		
Benzene	10 U		G	10 U			10 U			10 U			10 U		
trans-1,3-Dichloropropene	10 U			10 U			10 U			10 U			10 U		
Bromoform	10 U			10 U			10 U	J	D	10 U	J	D	10 U		
4-Methyl-2-pentanone	10 U			10 U			10 U			10 U			10 U		
2-Hexanone	10 U			10 U			10 U			10 U			10 U		
Tetrachloroethene	10 U			10 U			10 U			10 U			10 U		
1,1,2,2-Tetrachloroethane	10 U			10 U			10 U			10 U			10 U		
Toluene	10 U			10 U			10 U			10 U			10 U		
Chlorobenzene	10 U			10 U			10 U			10 U			10 U		
Ethylbenzene	10 U			10 U			10 U			10 U			10 U		
Styrene	10 U			10 U			10 U			10 U			10 U		
Xylene (total)	10 U			10 U			10 U			10 U			10 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank

TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS

TABLE 1A

Case No.: 25268 Memo #01
Site: Victoria Golf Course
Lab.: Southwest Labs of Oklahoma, Inc. (SWOK)
Reviewer: Adriane Scheele, ESAT/Lockheed
Date: February 21, 1997

Analysis Type: Low Level Groundwater Samples for Volatiles

Concentration in µg/L

Sample I.D.	Method Blank VBLK3			Method Blank VBLK4			Storage Blank VHBLK1			CRQL					
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	10 U			10 U			10 U			10					
Bromomethane	10 U			10 U			10 U			10					
Vinyl chloride	10 U			10 U			10 U			10					
Chloroethane	10 U			10 U			10 U			10					
Methylene chloride	10 U			2 L	J	AB	9 L	J	AB	10					
Acetone	10 U			10 U			3 L	J	AB	10					
Carbon disulfide	10 U			10 U			10 U			10					
1,1-Dichloroethene	10 U			10 U			10 U			10					
1,1-Dichloroethane	10 U			10 U			10 U			10					
1,2-Dichloroethene (total)	10 U			10 U			10 U			10					
Chloroform	10 U			10 U			10 U			10					
1,2-Dichloroethane	10 U			10 U			10 U			10					
2-Butanone	10 U			10 U			10 U			10					
1,1,1-Trichloroethane	10 U			10 U			10 U			10					
Carbon tetrachloride	10 U			10 U			10 U			10					
Bromodichloromethane	10 U			10 U			10 U			10					
1,2-Dichloropropane	10 U			10 U			10 U			10					
cis-1,3-Dichloropropene	10 U			10 U			10 U			10					
Trichloroethene	10 U			10 U			10 U			10					
Dibromochloromethane	10 U			10 U			10 U			10					
1,1,2-Trichloroethane	10 U			10 U			10 U			10					
Benzene	10 U			10 U			10 U			10					
trans-1,3-Dichloropropene	10 U			10 U			10 U			10					
Bromoform	10 U	J	D	10 U			10 U			10					
4-Methyl-2-pentanone	10 U			10 U			10 U			10					
2-Hexanone	10 U			10 U			10 U			10					
Tetrachloroethene	10 U			10 U			10 U			10					
1,1,2,2-Tetrachloroethane	10 U			10 U			10 U			10					
Toluene	10 U			10 U			10 U			10					
Chlorobenzene	10 U			10 U			10 U			10					
Ethylbenzene	10 U			10 U			10 U			10					
Styrene	10 U			10 U			10 U			10					
Xylene (total)	10 U			10 U			10 U			10					

Val-Validity: Refer to Data Qualifiers in Table 1B.
Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank
TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25268 Memo #01
Site: Victoria Golf Course
Lab.: Southwest Labs of Oklahoma, Inc. (SWOK)
Reviewer: Adriane Scheele, ESAT/Lockheed
Date: February 21, 1997

Analysis Type: Low Level Soil Samples for Volatiles

Concentration in µg/Kg

Station Location	SS-6-10			SS-8-10			SS-8-20			Method Blank			CRQL		
Sample I.D.	YX349			YX353			YX354			VBLK1					
Date of Collection	1/8/97			1/8/97			1/8/97								
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	14 U			12 U			63 U		I	10 U			10		
Bromomethane	14 U			12 U			63 U		I	10 U			10		
Vinyl chloride	14 U			12 U			63 U		I	10 U			10		
Chloroethane	14 U			12 U			63 U		I	10 U			10		
Methylene chloride	14 U	J	B	12 U	J	B	63 U		I	10 U			10		
Acetone	20 U	J	B	12 U	J	B	390		H	10 U			10		
Carbon disulfide	14 U			12 U			33 L	J	A	10 U			10		
1,1-Dichloroethene	14 U			12 U		G	63 U		I	10 U			10		
1,1-Dichloroethane	14 U			12 U			63 U		I	10 U			10		
1,2-Dichloroethene (total)	14 U			12 U			63 U		I	10 U			10		
Chloroform	14 U			12 U			63 U		I	10 U			10		
1,2-Dichloroethane	14 U			12 U			63 U		I	10 U			10		
2-Butanone	7 L	J	AH	12 U			310		H	10 U			10		
1,1,1-Trichloroethane	14 U			12 U			63 U		I	10 U			10		
Carbon tetrachloride	14 U			12 U			63 U		I	10 U			10		
Bromodichloromethane	14 U			12 U			63 U		I	10 U			10		
1,2-Dichloropropane	14 U			12 U			63 U		I	10 U			10		
cis-1,3-Dichloropropene	14 U			12 U			63 U		I	10 U			10		
Trichloroethene	14 U			12 U			63 U		I	10 U			10		
Dibromochloromethane	14 U			12 U			63 U		I	10 U			10		
1,1,2-Trichloroethane	14 U			12 U			63 U		I	10 U			10		
Benzene	14 U			12 U			29 L	J	A	10 U			10		
trans-1,3-Dichloropropene	14 U			12 U			63 U		I	10 U			10		
Bromoform	14 U			12 U			63 U		I	10 U			10		
4-Methyl-2-pentanone	14 U			12 U			88			10 U			10		
2-Hexanone	14 U			12 U			63 U		I	10 U			10		
Tetrachloroethene	14 U			12 U			63 U		I	10 U			10		
1,1,2,2-Tetrachloroethane	14 U			12 U			63 U		I	10 U			10		
Toluene	14 U			12 U		G	82			10 U			10		
Chlorobenzene	14 U			12 U			330			10 U			10		
Ethylbenzene	14 U			12 U			260			10 U			10		
Styrene	14 U			12 U			63 U		I	10 U			10		
Xylene (total)	2 L	J	A	12 U			1800			10 U			10		
Percent Solids	73 %			84 %			79 %			N/A			N/A		

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank
TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25268 Memo #01
Site: Victoria Golf Course
Lab.: Southwest Labs of Oklahoma, Inc. (SWOK)
Reviewer: Adriane Scheele, ESAT/Lockheed
Date: February 21, 1997

Analysis Type: Low Level Groundwater Samples for Semivolatiles

Concentration in µg/L

Station Location	GW-8-1			GW-15-1			GW-16-1			GW-17-1			Method Blank			Method Blank			CRQL		
Sample I.D.	YX327 D1			YX334 EB			YX335 EB			YX336 D1			SBLK1			SBLK3					
Date of Collection	1/8/97			1/8/97			1/8/97			1/8/97											
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Phenol	10 U			10 U			10 U			10 U			10 U			10 U			10		
bis(2-Chloroethyl)ether	10 U			10 U			10 U			10 U			10 U			10 U			10		
2-Chlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10		
1,3-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10		
1,4-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10		
1,2-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10		
2-Methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10		
2,2'-oxybis(1-Chloropropane)	10 U			10 U			10 U			10 U			10 U			10 U			10		
4-Methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10		
N-Nitroso-di-n-propylamine	10 U		G	10 U			10 U			10 U			10 U			10 U			10		
Hexachloroethane	10 U			10 U			10 U			10 U			10 U			10 U			10		
Nitrobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10		
Isophorone	10 U			10 U			10 U			0.5 L	J	A	10 U			10 U			10		
2-Nitrophenol	10 U			10 U			10 U			10 U			10 U			10 U			10		
2,4-Dimethylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10		
bis(2-Chloroethoxy)methane	10 U			10 U			10 U			10 U			10 U			10 U			10		
2,4-Dichlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10		
1,2,4-Trichlorobenzene	10 U		G	10 U			10 U			10 U			10 U			10 U			10		
Naphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10		
4-Chloroaniline	10 U			10 U			10 U			10 U			10 U			10 U			10		
Hexachlorobutadiene	10 U			10 U			10 U			10 U			10 U			10 U			10		
4-Chloro-3-methylphenol	10 U			10 U			10 U			0.6 L	J	A	10 U			10 U			10		
2-Methylnaphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10		
Hexachlorocyclopentadiene	10 U			10 U			10 U			10 U			10 U			10 U			10		
2,4,6-Trichlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10		
2,4,5-Trichlorophenol	25 U			25 U			25 U			25 U			25 U			25 U			25		
2-Chloronaphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10		
2-Nitroaniline	25 U			25 U			25 U			25 U			25 U			25 U			25		
Dimethylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10		
Acenaphthylene	10 U			10 U			10 U			10 U			10 U			10 U			10		
2,6-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10 U			10		
3-Nitroaniline	25 U			25 U			25 U			25 U			25 U			25 U			25		

Station Location	GW-8-1			GW-15-1			GW-16-1			GW-17-1			Method Blank			Method Blank			CRQL		
Sample I.D.	YX327 D1			YX334 EB			YX335 EB			YX336 D1			SBLK1			SBLK3					
Date of Collection	1/8/97			1/8/97			1/8/97			1/8/97											
Semivolatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Acenaphthene	10 U		G	10 U			10 U			10 U			10 U			10 U			10		
2,4-Dinitrophenol	25 U			25 U			25 U			25 U			25 U			25 U	J	E	25		
4-Nitrophenol	25 U			25 U			25 U			25 U			25 U			25 U	J	E	25		
Dibenzofuran	10 U			10 U			10 U			10 U			10 U			10 U			10		
2,4-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10 U	J	E	10		
Diethylphthalate	1 L	J	AH	10 U			10 U			1 L	J	AH	10 U			0.6 L	J	AC	10		
4-Chlorophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U			10 U			10		
Fluorene	10 U			10 U			10 U			10 U			10 U			10 U			10		
4-Nitroaniline	25 U			25 U			25 U			25 U			25 U			25 U	J	E	25		
4,6-Dinitro-2-methylphenol	25 U			25 U			25 U			25 U			25 U			25 U			25		
N-Nitrosodiphenylamine	10 U			10 U			10 U			10 U			10 U			10 U			10		
4-Bromophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U			10 U			10		
Hexachlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10		
Pentachlorophenol	25 U			25 U			25 U			25 U			25 U			25 U			25		
Phenanthrene	10 U			10 U			10 U			10 U			10 U			10 U			10		
Anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10		
Carbazole	10 U			10 U			10 U			10 U			10 U			10 U			10		
Di-n-butylphthalate	10 U	J	C	10 U			0.6 L	J	AC	10 U	J	C	10 U			1 L	J	AC	10		
Fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10		
Pyrene	10 U			10 U			10 U			10 U			10 U			10 U			10		
Butylbenzylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10		
3,3'-Dichlorobenzidine	10 U			10 U			10 U			10 U			10 U			10 U			10		
Benzo(a)anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10		
Chrysene	10 U			10 U			10 U			10 U			10 U			10 U			10		
bis(2-Ethylhexyl)phthalate	10 U	J	C	10 U			1 L	J	AC	10 U	J	C	10 U			1 L	J	AC	10		
Di-n-octylphthalate	10 U			10 U			10 U			10 U			10 U			10 U	J	F	10		
Benzo(b)fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U	J	F	10		
Benzo(k)fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U	J	F	10		
Benzo(a)pyrene	10 U			10 U			10 U			10 U			10 U			10 U	J	F	10		
Indeno(1,2,3-cd)pyrene	10 U			10 U			10 U			10 U			10 U			10 U	J	F	10		
Dibenz(a,h)anthracene	10 U			10 U			10 U			10 U			10 U			10 U	J	F	10		
Benzo(g,h,i)perylene	10 U			10 U			10 U			10 U			10 U			10 U	J	F	10		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25268 Memo #01
Site: Victoria Golf Course
Lab.: Southwest Labs of Oklahoma, Inc. (SWOK)
Reviewer: Adriane Scheele, ESAT/Lockheed
Date: February 21, 1997

Analysis Type: Low Level Soil Samples for Semivolatiles

Concentration in µg/Kg

Station Location	SS-6-10			SS-8-10			SS-8-20			Method Blank			CRQL								
Sample I.D.	YX349			YX353			YX354			SBLK2											
Date of Collection	1/8/97			1/8/97			1/8/97														
Semivolatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Phenol	450 U			390 U			420 U			330 U			330								
bis(2-Chloroethyl)ether	450 U			390 U			420 U			330 U			330								
2-Chlorophenol	450 U			390 U			420 U			330 U			330								
1,3-Dichlorobenzene	450 U			390 U			420 U			330 U			330								
1,4-Dichlorobenzene	61 L	J	A	390 U			44 L	J	A	330 U			330								
1,2-Dichlorobenzene	450 U			390 U			34 L	J	A	330 U			330								
2-Methylphenol	450 U			390 U			420 U			330 U			330								
2,2'-oxybis(1-Chloropropane)	450 U			390 U			420 U			330 U			330								
4-Methylphenol	450 U			390 U			240 L	J	A	330 U			330								
N-Nitroso-di-n-propylamine	450 U			390 U			420 U			330 U			330								
Hexachloroethane	450 U			390 U			420 U			330 U			330								
Nitrobenzene	450 U			390 U			420 U			330 U			330								
Isophorone	450 U			390 U			420 U			330 U			330								
2-Nitrophenol	450 U			390 U			420 U			330 U			330								
2,4-Dimethylphenol	450 U			390 U			420 U			330 U			330								
bis(2-Chloroethoxy)methane	450 U			390 U			420 U			330 U			330								
2,4-Dichlorophenol	450 U			390 U			420 U			330 U			330								
1,2,4-Trichlorobenzene	450 U			390 U			420 U			330 U			330								
Naphthalene	200 L	J	A	390 U			190 L	J	A	330 U			330								
4-Chloroaniline	450 U			390 U			420 U			330 U			330								
Hexachlorobutadiene	450 U			390 U			420 U			330 U			330								
4-Chloro-3-methylphenol	450 U			390 U			420 U			330 U			330								
2-Methylnaphthalene	110 L	J	A	390 U			130 L	J	A	330 U			330								
Hexachlorocyclopentadiene	450 U			390 U			420 U			330 U			330								
2,4,6-Trichlorophenol	450 U			390 U			420 U			330 U			330								
2,4,5-Trichlorophenol	1100 U			990 U			1000 U			830 U			830								
2-Chloronaphthalene	24 L	J	A	390 U			420 U			330 U			330								
2-Nitroaniline	1100 U			990 U			1000 U			830 U			830								
Dimethylphthalate	46 L	J	AH	390 U			420 U			330 U			330								
Acenaphthylene	450 U			390 U			420 U			330 U			330								
2,6-Dinitrotoluene	450 U			390 U			420 U			330 U			330								
3-Nitroaniline	1100 U			990 U			1000 U			830 U			830								

Station Location	SS-6-10			SS-8-10			SS-8-20			Method Blank			CRQL								
Sample I.D.	YX349			YX353			YX354			SBLK2											
Date of Collection	1/8/97			1/8/97			1/8/97														
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Acenaphthene	450 U			390 U			120 L	J	A	330 U			330								
2,4-Dinitrophenol	1100 U	J	E	990 U	J	E	1000 U	J	E	830 U			830								
4-Nitrophenol	1100 U	J	E	990 U	J	E	1000 U	J	E	830 U			830								
Dibenzofuran	450 U			390 U			54 L	J	A	330 U			330								
2,4-Dinitrotoluene	450 U	J	E	390 U	J	E	420 U	J	EG	330 U			330								
Diethylphthalate	450 U			390 U			35 L	J	AH	330 U			330								
4-Chlorophenyl phenyl ether	450 U			390 U			420 U			330 U			330								
Fluorene	49 L	J	A	390 U			150 L	J	A	330 U			330								
4-Nitroaniline	1100 U	J	E	990 U	J	E	1000 U	J	E	830 U			830								
4,6-Dinitro-2-methylphenol	1100 U			990 U			1000 U			830 U			830								
N-Nitrosodiphenylamine	450 U			390 U			420 U			330 U			330								
4-Bromophenyl phenyl ether	450 U			390 U			420 U			330 U			330								
Hexachlorobenzene	450 U			390 U			420 U			330 U			330								
Pentachlorophenol	1100 U			990 U			1000 U			830 U			830								
Phenanthrene	120 L	J	A	390 U			1400			330 U			330								
Anthracene	450 U			390 U			550			330 U			330								
Carbazole	450 U			390 U			410 L	J	A	330 U			330								
Di-n-butylphthalate	2000			390 U			420 U	J	C	330 U			330								
Fluoranthene	46 L	J	A	390 U			2100			330 U			330								
Pyrene	42 L	J	A	390 U			1300		G	330 U			330								
Butylbenzylphthalate	450 U			390 U			420 U			330 U			330								
3,3'-Dichlorobenzidine	450 U			390 U			420 U			330 U			330								
Benzo(a)anthracene	450 U			390 U			980			330 U			330								
Chrysene	40 L	J	A	390 U			1000			330 U			330								
bis(2-Ethylhexyl)phthalate	2000		H	390 U	J	C	16000			27 L	J	AC	330								
Di-n-octylphthalate	43 L	J	AH	390 U			420 U			330 U			330								
Benzo(b)fluoranthene	450 U			390 U			670			330 U			330								
Benzo(k)fluoranthene	450 U			390 U			630			330 U			330								
Benzo(a)pyrene	450 U			390 U			830			330 U			330								
Indeno(1,2,3-cd)pyrene	450 U			390 U			420			330 U			330								
Dibenz(a,h)anthracene	450 U			390 U			250 L	J	A	330 U			330								
Benzo(g,h,i)perylene	450 U			390 U			440			330 U			330								
Percent Solids	73 %			84 %			79 %			N/A			N/A								

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
L	Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX336

Lab Name: SWL-TULSA Contract: 68-D5-0021

Lab Code: SWOK Case No.: 25268 SAS No.: SDG No.: YX327

Matrix: (soil/water) WATER Lab Sample ID: 28122.04

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C23399.D

Level: (low/med) LOW Date Received: 01/10/97

% Moisture: not dec. _____ Date Analyzed: 01/17/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	13.621	28	J
2.	110-43-0	2-Heptanone	14.043	68	NJ
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
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24.					
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26.					
27.					
28.					
29.					
30.					

AS, ESAT
2/11/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX349

Lab Name: SWL-TULSA Contract: 68-D5-0021

Lab Code: SWOK Case No.: 25268 SAS No.: SDG No.: YX327

Matrix: (soil/water) SOIL Lab Sample ID: 28122.05

Sample wt/vol: 5.0 (g/mL) G Lab File ID: L24127.D

Level: (low/med) LOW Date Received: 01/10/97

% Moisture: not dec. 27 Date Analyzed: 01/13/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: ~~15~~ 13

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~		~~UNKNOWN~~	~~12.359~~	~~10~~	~~JB~~
2.		UNKNOWN	14.296	9	J
3.		UNKNOWN	15.002	12	J
4.		UNKNOWN	15.089	28	J
5.		UNKNOWN	15.389	7	J
6.		UNKNOWN	15.563	20	J
7.		UNKNOWN	15.814	26	J
8.		Benzene, -dichloro-	15.950	8	J
9.		UNKNOWN	16.095	10	J
10.		Naphthalene, decahydro-	16.336	16	J
11.		UNKNOWN	16.520	12	J
12.		Benzene, ethyl-dimethyl-	16.733	7	J
~~13.~~		~~UNKNOWN~~	~~16.936~~	~~23~~	~~JB~~
14.		UNKNOWN	17.140	12	J
15.		UNKNOWN CYCLOALKANE	18.273	7	J
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1,13 found in method blanks

AS, ESAT
2/11/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX353

Lab Name: SWL-TULSA Contract: 68-D5-0021

Lab Code: SWOK Case No.: 25268 SAS No.: SDG No.: YX327

Matrix: (soil/water) SOIL Lab Sample ID: 28122.06

Sample wt/vol: 5.0 (g/mL) G Lab File ID: L24128.D

Level: (low/med) LOW Date Received: 01/10/97

% Moisture: not dec. 16 Date Analyzed: 01/13/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: ~~3~~ 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~		~~UNKNOWN~~	~~12.444~~	~~8~~	~~JB~~
2.		UNKNOWN	15.856	7	J
~~3.~~		~~UNKNOWN~~	~~16.927~~	~~8~~	~~JB~~
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1,3 found in method blanks

AS, ESAT 2/11/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX354

Lab Name: SWL-TULSA Contract: 68-D5-0021

Lab Code: SWOK Case No.: 25268 SAS No.: SDG No.: YX327

Matrix: (soil/water) SOIL Lab Sample ID: 28122.07

Sample wt/vol: 1.0 (g/mL) G Lab File ID: L24134.D

Level: (low/med) LOW Date Received: 01/10/97

% Moisture: not dec. 21 Date Analyzed: 01/13/97

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: ~~30~~ 28

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN CYCLOALKANE	10.590	130	J
2.		Cyclohexane, trimethyl-	12.805	120	J
3.		UNKNOWN HYDROCARBON	13.103	130	J
4.		UNKNOWN	13.267	53	J
5.		UNKNOWN	13.827	92	J
6.		UNKNOWN CYCLOALKANE	14.011	140	J
7.		UNKNOWN HYDROCARBON	14.253	710	J
8.		UNKNOWN	14.359	780	J
9.		UNKNOWN	14.475	760	J
10.		Benzene, ethyl-methyl-	15.056	1400	J
11.		UNKNOWN	15.163	2200	J
12.		Benzene, ethyl-methyl-	15.356	640	J
13.		Benzene, trimethyl-	15.550	2600	J
14.		UNKNOWN	15.734	590	J
15.		UNKNOWN ALKYL BENZENE	15.889	2000	J
16.		Benzene, trimethyl-	16.006	1800	J
17.		UNKNOWN ALKYL BENZENE	16.238	480	J
18.		UNKNOWN	16.316	880	J
19.	1120-21-4	Undecane	16.461	1000	NJ
20.		UNKNOWN ALKYL BENZENE	16.626	860	J
21.		UNKNOWN ALKYL BENZENE	16.830	380	J
~~22.~~		~~UNKNOWN~~	~~16.917~~	~~800~~	~~JB~~
23.		UNKNOWN	17.102	380	J
24.		UNKNOWN ALKYL BENZENE	17.189	440	J
25.		UNKNOWN	17.461	230	J
26.		UNKNOWN	17.635	380	J
27.		UNKNOWN	17.810	120	J
28.		UNKNOWN	17.956	160	J
29.		UNKNOWN	18.082	150	J
~~30.~~	~~91-20-3~~	~~Naphthalene~~	~~18.382~~	~~100~~	~~NJ~~

22 found in method blanks
30 semivolatile target analyte.

100
AS, ESAT 2/11/97

1F

EPA SAMPLE NO.

YX327

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ab Name: SWL-TULSA Contract: 68-D5-0021

Lab Code: SWOK Case No.: 25268 SAS No.: SDG No.: YX327

Matrix: (soil/water) WATER Lab Sample ID: 28122.01

Sample wt/vol: 1000 (g/mL) ML Lab File ID: M4466.D

Level: (low/med) LOW Date Received: 01/10/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 01/10/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 01/17/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.6

Number TICs found: ~~17~~ 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		~~UNKNOWN ORGANIC ACID~~	~~3.585~~	~~3~~	~~J~~
2.		~~UNKNOWN~~	~~3.990~~	~~2~~	~~JB~~
3.		~~UNKNOWN~~	~~4.592~~	~~280~~	~~J~~
4.		~~UNKNOWN~~	~~4.721~~	~~4~~	~~JB~~
5.	~~110-43-0~~	~~2-Heptanone~~	~~4.859~~	~~42~~	~~NJ~~
6.	~~111-76-2~~	~~Ethanol, 2-butoxy-~~	~~5.057~~	~~170~~	~~NJ~~
7.		~~UNKNOWN~~	~~5.235~~	~~4~~	~~JB~~
8.		~~UNKNOWN~~	~~5.610~~	~~5~~	~~JB~~
9.		UNKNOWN	5.670	4	J
10.	~~111-90-0~~	~~Ethanol, 2-(2-ethoxyethoxy)-~~	6.431	2	NJ
11.		UNKNOWN	6.767	3	J
12.	112-07-2	2-Butoxyethyl acetate	7.656	110	NJ
13.	95-16-9	Benzothiazole	9.633	2	NJ
14.	143-07-7	Dodecanoic acid	12.752	3	NJ
15.		~~UNKNOWN~~	~~15.573~~	~~3~~	~~J~~
16.		UNKNOWN	15.892	4	J
17.		UNKNOWN	16.031	8	J
18.					
19.					
20.					
21.					
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24.					
25.					
26.					
27.					
28.					
29.					
30.					

10 unknown
15 laboratory artifact (phthalate)
7,8 found in SBLK1
1-7 elute before phenol (1st SVOA target analyte)

376

AB, ESAT
2/12/97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YX335

ab Name: SWL-TULSA Contract: 68-D5-0021

Lab Code: SWOK Case No.: 25268 SAS No.: SDG No.: YX327

Matrix: (soil/water) WATER Lab Sample ID: 28122.03

Sample wt/vol: 1000 (g/mL) ML Lab File ID: M4470.D

Level: (low/med) LOW Date Received: 01/10/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 01/10/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 01/17/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.5

Number TICs found: ~~2~~ 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~		~~UNKNOWN~~	~~5.233~~	~~5~~	~~JB~~
2.		UNKNOWN ORGANIC ACID	13.169	2	J
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
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29.					
30.					

1 found in SBLK1 & elutes before phenol (1st SVOA target analyte)

AS, ESAT
2/12/97

Data file : m4470.d Matrix : WATER

	CAS #	Compound	R.T.	Estimated Conc.
1	~~760-21-4~~	~~Pentane, 3-methylene~~	~~4.798~~	~~2.17~~
2	~~617-78-7~~	~~Pentane, 3-ethyl~~	~~5.617~~	~~5.51~~
3	~~4923-77-7~~	~~Cyclohexane, 1-ethyl-2-methyl-, cis-~~ unknown	5.677	4.10

Concentration Units: Water: UG/L Soil: UG/KG

1-2 found in SBLK1
1 elutes before phenol (1st SVOA target analyte)

6
AS, ESAT
2/12/97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX336

Lab Name: SWL-TULSA Contract: 68-D5-0021

Lab Code: SWOK Case No.: 25268 SAS No.: SDG No.: YX327

Matrix: (soil/water) WATER Lab Sample ID: 28122.04

Sample wt/vol: 1000 (g/mL) ML Lab File ID: M4471.D

Level: (low/med) LOW Date Received: 01/10/97

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 01/10/97

Concentrated Extract Volume: 1000(uL) Date Analyzed: 01/17/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.2

Number TICs found: ~~26~~ 15

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		~~UNKNOWN ORGANIC ACID~~	~~3.624~~	~~4~~	~~J~~
2.	~~68-12-2~~	~~Formamide, N,N-dimethyl-~~	~~3.713~~	~~2~~	~~NJ~~
3.		~~UNKNOWN ORGANIC ACID~~	~~3.990~~	~~3~~	~~J~~
4.		~~UNKNOWN~~	~~4.602~~	~~380~~	~~J~~
5.		~~-Acetoxy--propanol~~ unknown	~~4.730~~	~~6~~	~~J~~
6.	~~110-43-0~~	~~2-Heptanone~~	~~4.869~~	~~66~~	~~NJ~~
7.	~~111-76-2~~	~~Ethanol, 2-butoxy-~~	~~5.077~~	~~230~~	~~NJ~~
8.		~~UNKNOWN~~	~~5.235~~	~~4~~	~~JB~~
9.		~~UNKNOWN~~	~~5.363~~	~~2~~	~~JB~~
10.		~~-Heptene, -methyl-~~	~~5.620~~	~~5~~	~~J~~ B
11.		~~Ethanol, -[-(-ethoxyethoxy)e~~	6.441	4	J
12.		UNKNOWN ~~ORGANIC ACID~~	6.777	3	J
13.		UNKNOWN	6.886	2	J
14.		-Heptanone, -methyl-	7.143	3	J
15.	112-07-2	2-Butoxyethyl acetate	7.667	160	NJ
16.	1119-40-0	Pentanedioic acid, dimethyl ester	8.310	2	NJ
17.	65-85-0	Benzoic Acid	8.616	3	NJ
18.		UNKNOWN ORGANIC ACID	8.676	2	J
19.	119-36-8	Methyl Salicylate	9.210	2	NJ
20.	95-16-9	Benzothiazole	9.636	3	NJ
21.	~~85-44-9~~	~~Phthalic anhydride~~ unknown	10.645	3	NJ
22.	143-07-7	Dodecanoic acid	12.767	6	NJ
23.		~~Benzene, -methyl--(-methylet~~	12.866	3	J
24.	~~85-44-9~~	~~Phthalic anhydride~~	~~15.581~~	~~3~~	~~NJ~~
25.		UNKNOWN	15.900	6	J
26.		UNKNOWN	16.040	11	J
27.					
28.					
29.					
30.					

11,23 unknown
24 laboratory artifact (phthalate)
8,10 found in SBLK1
1-9 elute before phenol (1st SVOA target analyte)

428

AS, ESAT
2/12/97

Data file : m4471.d Matrix : WATER

	CAS #	Compound	R.T.	Estimated Conc.
1	~~591-21-9~~	~~Cyclohexane, 1,3-dimethyl-~~ unknown	5.679	3.70
	~~112-36-7~~	~~Ethane, 1,1'-oxybis[2-ethoxy-]~~	~~6.440~~	~~3.57~~ 1-20-94
2	~~291-64-5~~	~~Cycloheptane~~ unknown	6.796	2.84
3	~~541-02-6~~	~~Cyclopentasiloxane, decamethyl-~~	~~8.448~~	~~2.14~~
4	~~56762-00-6~~	~~Pentane, 2,2' oxybis-~~ unknown	8.745	2.31
5	~~629-92-5~~	~~Nonadecane~~ unknown alkane	22.06	2.03

Concentration Units: Water: UG/L Soil: UG/KG

3 laboratory artifact (column bleed) & found in SBLK1

7

AS, ESAT
2/12/94

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX349

Lab Name: SWL-TULSA Contract: 68-D5-0021

Lab Code: SWOK Case No.: 25268 SAS No.: SDG No.: YX327

Matrix: (soil/water) SOIL Lab Sample ID: 28122.05

Sample wt/vol: 30.0 (g/mL) G Lab File ID: M4493.D

Level: (low/med) LOW Date Received: 01/10/97

% Moisture: 27 decanted: (Y/N) N Date Extracted: 01/10/97

Concentrated Extract Volume: 500(uL) Date Analyzed: 01/17/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.9

Number TICs found: ~~33~~ 30

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		~~UNKNOWN~~	~~3.378~~	~~1000~~	~~J~~
2.	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.288~~	~~6900~~	~~NJAB~~
3.	~~489-39-4~~	~~1H-Cycloprop[e]azulene, deca~~	11.929	860	NJ
4.	~~483-77-2~~	~~Naphthalene, 1,2,3,4-tetrahy~~	12.650	640	NJ
5.	~~10544-50-0~~	~~Sulfur, mol. (S8)~~ unknown	12.690	590	NJ
6.		UNKNOWN	14.155	930	J
7.	~~0-00-0~~	~~(1H)2,3-Dihydroindene, 1,1,3~~	14.286	880	NJ
8.		UNKNOWN	16.130	1700	J
9.		UNKNOWN ~~ORGANIC ACID~~	16.454	560	J
10.		UNKNOWN	16.970	2600	J
11.		~~Phenanthrene, -methyl--(-met~~	17.750	9300	J
12.	78-42-2	Phosphoric acid, tris(2-ethy	18.736	6000	NJ
13.		~~UNKNOWN PHTHALATE~~	~~19.286~~	~~870~~	~~J~~
14.		UNKNOWN	19.990	8600	J
15.		UNKNOWN	20.113	3000	J
16.		~~,-Benzo[]dipyran--prop~~ unknown	21.679	1300	J
17.		~~,-Benzo[]dipyran--prop~~ unknown	21.854	5500	J
18.		UNKNOWN	21.997	980	J
19.		~~,-Benzo[]dipyran--prop~~ unknown	22.768	4600	J
20.		UNKNOWN	22.860	850	J
21.		UNKNOWN	23.025	1800	J
22.		UNKNOWN	23.200	3400	J
23.		~~Cholestan--one, -dimethyl-~~,	23.251	8200	J
24.		UNKNOWN	23.303	2400	J
25.		UNKNOWN	23.477	15000	J
26.		UNKNOWN	23.663	3100	J
27.		UNKNOWN	23.724	25000	J
28.		UNKNOWN	23.807	7000	J
29.		UNKNOWN	23.920	6700	J
30.		UNKNOWN	24.033	5900	J

23, 3, 7 unknown
4 substituted naphthalene
11 substituted phenanthrene
12 Phosphoric acid, tris(2-ethylhexyl) ester
13 laboratory artifact (phthalate)
2 found in SBLK2
1-2 elute before phenol (1st SVOA target analyte)

AS, ESAT
2/13/97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YX349

Lab Name: SWL-TULSA Contract: 68-D5-0021

Lab Code: SWOK Case No.: 25268 SAS No.: SDG No.: YX327

Matrix: (soil/water) SOIL Lab Sample ID: 28122.05

Sample wt/vol: 30.0 (g/mL) G Lab File ID: M4493.D

Level: (low/med) LOW Date Received: 01/10/97

% Moisture: 27 decanted: (Y/N) N Date Extracted: 01/10/97

Concentrated Extract Volume: 500(uL) Date Analyzed: 01/17/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.9

Number TICs found: ~~33~~ 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	24.290	3800	J
2.		UNKNOWN	24.372	3700	J
3.		UNKNOWN	24.691	8400	J
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

AS, ESAT
2/13/97

Data file : m4493.d Matrix : SOIL

	CAS #	Compound	R.T.	Estimated Conc.
1	31295-56-4	Dodecane, 2,6,11-trimethyl-	9.962	1003.12
2	3891-98-3	Dodecane, 2,6,10-trimethyl-	11.06	928.55
3	629-62-9	Pentadecane	11.87	767.79
4	17081-50-4	Pentadecane, 2,6,10,13-tetramethyl-	13.91	713.36
5	1112-66-9	Silane, tetra-2-propenyl- unknown	16.06	446.41
6	638-36-8	Hexadecane, 2,6,10,14-tetramethyl- unknown	16.59	1844.66
7	112-95-8	Eicosane	17.20	1032.92
8	646-31-1	Tetracosane	18.32	5381.83
9	638-67-5	Tricosane	18.85	7140.28
10	646-31-1	Tetracosane	19.66	3592.55
11	112-95-8	Eicosane	19.84	6651.74
12	629-97-0	Docosane	20.31	5423.28
13	6079-19-2	Cholestane, 4,5-epoxy-, (4.alpha.,5.alph	20.43	1643.42
14	112-95-8	Eicosane	20.77	7759.64
15		UNKNOWN ALKANE	20.87	1995.56
16	6418-44-6	Heptadecane, 3-methyl-	21.10	997.15
17	112-95-8	Eicosane	21.19	3775.56
18		UNKNOWN ALKANE	21.30	912.46
19	629-78-7	Heptadecane	21.61	5510.81
20	629-94-7	Heneicosane	22.04	1848.86
21	593-45-3	Octadecane	22.49	3361.80
22	112-89-0	Octadecane, 1-bromo-	22.94	3753.35

Concentration Units: Water: UG/L Soil: UG/KG

13 unknown

1-4, 7-12, 14, 16, 17, 19-22 unknown alkane

AS, ESAT 2/13/97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX353

Lab Name: SWL-TULSA Contract: 68-D5-0021

Lab Code: SWOK Case No.: 25268 SAS No.: SDG No.: YX327

Matrix: (soil/water) SOIL Lab Sample ID: 28122.06

Sample wt/vol: 30.0 (g/mL) G Lab File ID: M4492.D

Level: (low/med) LOW Date Received: 01/10/97

% Moisture: 16 decanted: (Y/N) N Date Extracted: 01/10/97

Concentrated Extract Volume: 500(uL) Date Analyzed: 01/17/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2

Number TICs found: 9 1

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		~~UNKNOWN~~	~~3.299~~	~~94~~	~~J~~
2.		~~UNKNOWN~~	~~3.388~~	~~350~~	~~J~~
3.		~~UNKNOWN~~	~~3.447~~	~~140~~	~~J~~
4.	~~141-78-6~~	~~Ethyl Acetate~~	~~3.714~~	~~140~~	~~NJB~~
5.	~~141-79-7~~	~~3-Penten-2-one, 4-methyl-~~	~~3.823~~	~~410~~	~~NJAB~~
6.		~~UNKNOWN~~	~~4.040~~	~~83~~	~~JB~~
7.	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.297~~	~~6500~~	~~NJAB~~
8.		~~UNKNOWN~~	~~5.226~~	~~130~~	~~JB~~
9.		UNKNOWN	25.729	82	J
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

4,5,7,8 found in SBLK2
1-8 elute before phenol (1st SVOA target analyte)

AS, ESAT 573
2/13/97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX354

Lab Name: SWL-TULSA Contract: 68-D5-0021

Lab Code: SWOK Case No.: 25268 SAS No.: SDG No.: YX327

Matrix: (soil/water) SOIL Lab Sample ID: 28122.07

Sample wt/vol: 30.0 (g/mL) G Lab File ID: M4497.D

Level: (low/med) LOW Date Received: 01/10/97

% Moisture: 21 decanted: (Y/N) N Date Extracted: 01/10/97

Concentrated Extract Volume: 500(uL) Date Analyzed: 01/17/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.6

Number TICs found: ~~23~~ 18

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		~~UNKNOWN~~	~~3.370~~	~~1300~~	~~J~~
2.		~~UNKNOWN ORGANIC ACID~~	~~3.628~~	~~430~~	~~J~~
3.		~~UNKNOWN ORGANIC ACID~~	~~3.817~~	~~4600~~	~~J~~
4.		~~UNKNOWN ORGANIC ACID~~	~~4.244~~	~~380~~	~~J~~
5.	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.293~~	~~5400~~	~~NJAB~~
6.		UNKNOWN ORGANIC ACID	5.971	700	J
7.	~~95-36-3~~	~~1,2,4~~-Trimethylbenzene	6.348	380	NJ
8.		UNKNOWN	8.018	220	J
9.		Benzene, -tetramethyl-	8.636	280	J
10.	57-10-3	Hexadecanoic acid	15.727	1600	NJ
11.	~~203-64-5~~	~~4H-Cyclopenta[def]phenanthre~~	15.888	690	NJ
12.		UNKNOWN	16.455	3800	J
13.	~~19407-28-4~~	~~Phenanthrene, 1,2,3,4,4a,9,1~~	16.698	380	NJ
14.		UNKNOWN	16.809	570	J
15.		UNKNOWN	16.961	3600	J
16.		UNKNOWN	20.408	740	J
17.		UNKNOWN	20.798	800	J
18.		UNKNOWN ~~PAH~~	21.004	1400	J
19.		UNKNOWN	21.096	1200	J
20.	~~192-97-2~~	~~Benzo[e]pyrene~~ unknown PAH	21.230	1200	NJ
21.		UNKNOWN ~~ORGANIC ACID~~	21.889	1900	J
22.		UNKNOWN ~~PAH~~	23.032	790	J
23.		UNKNOWN	23.526	1300	J
24.					
25.					
26.					
27.					
28.					
29.					
30.					

11 unknown
13 substituted phenanthrene
5 & found in SBLK2
1-5 elute before phenol (1st SVOA target analyte)

AS, ESAT 2/13/97

Data file : m4497.d Matrix : SOIL

	CAS #	Compound	R.T.	Estimated Conc.
1	3891-98-3	Dodecane, 2,6,10-trimethyl-	11.05	315.45
2	31295-56-4	Dodecane, 2,6,11-trimethyl-	13.90	357.80
3	638-36-8	Hexadecane, 2,6,10,14-tetramethyl-	14.66	555.58
4	4926-78-7	Cyclohexane, 1-ethyl-4-methyl-, cis-	15.30	354.00
5	629-94-7	Heneicosane	16.58	1098.56
6	112-95-8	Eicosane	17.76	125.94
7	593-45-3	Octadecane	18.31	120.98
8	31295-56-4	Dodecane, 2,6,11-trimethyl-	18.84	133.52
9	630-01-3	Hexacosane	19.35	137.96
10	638-68-6	Triacontane	19.84	140.67
11	55320-06-4	Heneicosane, 11-decyl-	20.31	2655.89
12	112-95-8	Eicosane	20.76	2637.52
13	112-95-8	Eicosane	21.18	1772.95
14	14982-53-7	Cholestane	21.49	1502.35
15	593-49-7	Heptacosane	21.61	2860.83
16	544-85-4	Dotriacontane	22.03	1285.01
17	36728-72-0	28-Nor-17.beta.(H)-hopane	22.47	3539.45
18		UNKNOWN ALKANE	22.66	2085.62
19	630-01-3	Hexacosane	22.93	2033.50
20	17312-55-9	Decane, 3,8-dimethyl-	23.46	2417.90

Concentration Units: Water: UG/L Soil: UG/KG

4, 14, 17 unknown

1-3, 5-13, 15, 16, 19, 20 unknown alkane

AS, ESAT
2/13/97

LOCKHEED MARTIN

TPO: [ ]FYI [X]Attention [ ]Action Region 9

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25268 Memo #01 LABORATORY SWOK

SDG NO. YX354 SITE NAME Victoria Golf Course

SOW OLM03.2 REVIEW COMPLETION DATE February 21, 1997

REVIEWER [ ] ESD [X] ESAT REVIEWER'S NAME Adriane Scheele

NO. OF SAMPLES 4 WATER 3 SOIL ____ OTHER

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES/PRESERVATION	O	O	____	____
2. GC-MS TUNE/GC PERFORMANCE	O	O	____	____
3. INITIAL CALIBRATIONS	O	O	____	____
4. CONTINUING CALIBRATIONS	X	X	____	____
5. FIELD QC	O	X	____	____
6. LABORATORY BLANKS	X	X	____	____
7. SURROGATES	O	O	____	____
8. MATRIX SPIKE/DUPLICATES	O	O	____	____
9. REGIONAL QC	N/A	N/A	____	____
10. INTERNAL STANDARDS	O	X	____	____
11. COMPOUND IDENTIFICATION	O	O	____	____
12. COMPOUND QUANTITATION	O	O	____	____
13. SYSTEM PERFORMANCE	O	O	____	____
14. OVERALL ASSESSMENT	X	X	____	____

O = Data have no problems or problems that do not affect data quality.
X = Data are qualified due to minor problems.
M = Data are qualified due to major problems.
Z = Data are unacceptable.
N/A = Not Applicable

TPO ACTION: None.

TPO ATTENTION: (1) Several results for volatile and semivolatile target analytes are qualified as nondetected and estimated (U,J) due to contamination in laboratory blanks. (2) Several results for volatile and semivolatile target analytes are estimated (J) due to calibration problems. (3) Several results for semivolatile target analytes in one of the method blanks are estimated (J) due to a low internal standard response.

AREAS OF CONCERN: None.

LOCKHEED MARTIN

In Reference to Case No(s).:
25268 Memo #01

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log #1

Date of Call: February 13, 1997

Laboratory Name: Southwest Labs of Oklahoma, Inc. (SWOK)

Lab Contact: Harry Borg

Region: 9

Regional Contact: Adriane Scheele, ESAT/Lockheed

Call Initiated By: _____ Laboratory __X__ Region

In reference to data for the following:
Sample Delivery Group (SDG) YX354 for Volatile and Semivolatile Analyses

Summary of Questions/Issues Discussed:

1. [VOA] Naphthalene is reported as a tentatively identified compound (TIC) at a retention time of 18.382 min. in Form 1E (page 100) for the volatile fraction of sample YX354. Section 11.1.2.2 of Exhibit D-38/VOA states that semivolatile target compounds listed in Exhibit C are not to be reported as TICs. Please clarify why naphthalene, a semivolatile target compound, is reported or submit a corrected Form 1E.

2. [BNA] The response for internal standard perylene-d_{12} in semivolatile method blank SBLK3 did not meet the quality control (QC) requirements listed in Section 11.3.6 of Exhibit D-50/SVOA. Were the corrective actions specified in Section 12.1.5.4 of Exhibit D-55/SVOA performed? Please clarify.

Summary of Resolution:

1. Corrected Form 1E was received at ESAT by fax on February 20, 1997.

2. Corrective action was not taken as per Section 12.1.5.4 of Exhibit D-55/SVOA since the blank in question (SBLK3) was the blank from sample reextracts. There was insufficient sample to do a second reextraction. The problem was noted in the SDG narrative.

Adriane Scheele
Signature

February 21, 1997
Date

Distribution: (1) Lab Copy, (2) Region Copy, (3) CLASS Copy

LOCKHEED MARTIN

Contract Laboratory Program
REGION 9/LABORATORY COMMUNICATION SYSTEM
CSF COMPLETENESS EVIDENCE AUDIT PROGRAM
Telephone Communication Summary Form

AUDIT NO.: 2/97/17
CASE NO.: 25268 Memo #01
SDG NO.: YX354
FILENAME: 25268M01.TCS

LAB CONTACT: Harry Borg
LAB CODE: SWOK
LAB NAME: Southwest Labs of Oklahoma, Inc.
LAB LOCATION: Broken Arrow, OK

Summary of Questions/Issues Discussed:

The following items were noted during the audit of sample delivery group (SDG) YX354. Please note the corrections in your copy.

1. Page numbers 1 through **16** and **17** through 18 are incorrectly listed in Sections 2 and 3, respectively, of Form DC-2-1. The auditor has manually corrected Form DC-2-1 with page numbers 1 through **15** and **16** through 18 for Sections 2 and 3, respectively.

2. An unnumbered page was found between pages 54 and 55. The auditor has labeled it as page 54A.

3. A handwritten SDG narrative which was not paginated was found after page 962 of the data package. The auditor has paginated the narrative as 963 through 965. The auditor has also included this narrative and page numbers to Section 10 of Form DC-2-4.

Summary of Resolution:

A laboratory response is not required.

Adrian Schule
Auditor, ESAT/Lockheed

February 13, 1997
Date of Contact

Distribution: (1) Lab Copy, (2) Region Copy, (3) CLASS Copy

LOCKHEED MARTIN

Lockheed Martin Environmental Services
Environmental Services Assistance Team, Region 9
301 Howard Street, Suite 970, San Francisco, CA 94105-2241
Phone: 415-278-0570 Fax: 415-278-0588

VCC Issue 3/Pn1
So. Issue 3/Pn1

MEMORANDUM

TO: Rachel Loftin
Site Assessment Manager
States Planning & Assessment Office, SFD-5

THROUGH: Rose Fong
ESAT Regional Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Jack Berges
Team Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68D60005
Work Assignment No.: 9-96-0-4
Technical Direction No.: 9604112

DATE: February 10, 1997

SUBJECT: Review of Analytical Data

Attached are comments resulting from ESAT Region 9 validation of the following analytical data:

SITE:	Victoria Golf Course
SITE ACCOUNT NO.:	ZZ
CERCLIS ID NO.:	CAD980818926
CASE NO.:	25218 Memo #02
SDG NO.:	YX341
LABORATORY:	American Technical & Analytical Services (ATAS)
ANALYSIS:	Volatiles and Semivolatiles
SAMPLES:	14 Soil Samples (see Case Summary)
COLLECTION DATE:	December 9 and 10, 1996
REVIEWER:	Adriane Scheele, ESAT/Lockheed

The comments and qualifications presented in this report have been reviewed and approved by the EPA Work Assignment Manager (WAM) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Deirdre O'Leary (ESAT/Lockheed) at (415) 278-0585 or Rose Fong (QA Office/EPA) at (415) 744-1534.

Attachment

cc: Larry Marchin, TPO USEPA Region 7

TPO: [ ]FYI [X]Attention [X]Action

SAMPLING ISSUES: [ ]Yes [X]No

LOCKHEED MARTIN

Data Validation Report

Case No.: 25218 Memo #02
Site: Victoria Golf Course
Laboratory: American Technical & Analytical Services (ATAS)
Reviewer: Adriane Scheele, ESAT/Lockheed
Date: February 10, 1997

I. Case Summary

SAMPLE INFORMATION:

VOA and BNA Samples:	YX339 through YX348, YX351, YX352, YX355, and YX356
Concentration and Matrix:	Low Level Soil
Analysis:	Volatiles and Semivolatiles
SOW:	OLM03.2
Collection Date:	December 9 and 10, 1996
Sample Receipt Date:	December 11 and 13, 1996
Extraction Date:	December 16, 1996
VOA Analysis Date:	December 13, 16, and 17, 1996
BNA Analysis Date:	December 27, 28, 30, and 31, 1996

FIELD QC:

Trip Blanks (TB):	None
Field Blanks (FB):	YX331*
Equipment Blanks (EB):	YX330* and YX332* (*See Additional Comments)
Background Samples (BG):	YX343 through YX346
Field Duplicates (D1):	YX339 and YX356
(D2):	YX341 and YX355

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLKDN:	YX342, YX342MS, YX342MSD, YX343, YX351, and YX352
VBLKDO:	YX339, YX340, YX341, YX344 through YX348, YX355, and YX356
VBLKDP:	VHBLKDP
SBLKEZ:	YX339 through YX442, YX442MS, YX442MSD, YX443 through YX448, YX451, YX451DL, YX452, YX452RE, YX455, and YX456

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review

TPO ACTION:

Quantitation limits for several semivolatile analytes in two samples are rejected (R) due to low internal standard area counts.

TPO ATTENTION:

(1) Several results are qualified as nondetected and estimated (U,J) due to contamination in method and storage blanks. (2) Several results are estimated (J) due to calibration problems. (3) Several semivolatile results in two samples are estimated (J) due to low internal standard area counts.

DL-Dilution; MS-Matrix Spike; MSD-Matrix Spike Duplicate;
RE-Reanalysis; VHBLK-Storage Blank

SAMPLING ISSUES:

None.

ADDITIONAL COMMENTS:

*Equipment blanks YX330 and YX332 and field blank YX331 were collected with the samples of this sample delivery group (SDG). The results for equipment blank YX330, collected on December 9, 1996, and field blank YX331 and equipment blank YX332, collected on December 10, 1996, are located in Case 25218 Memo #01, SDG YX323. Methylene chloride was detected in field blank YX331 and equipment blank YX332 at concentrations of 14 µg/L (14 µg/Kg) and 5 µg/L (5 µg/Kg), respectively. Di-n-butylphthalate and bis(2-ethylhexyl)phthalate were detected in equipment blank YX330 at concentrations of 0.5 µg/L (17 µg/Kg) and 1 µg/L (33 µg/Kg), respectively.

Acetone was detected in background sample YX343 at a concentration of 26 µg/Kg.

The Tentatively Identified Compounds (TICs) found in the samples are reported on the Form 1Es, 1Fs, and in alkane reports included in this report. The user should note that the alkane report summarizes TICs which are alkanes. No TICs were detected in the volatile fraction of samples YX339 through YX342, YX344 through YX348, YX355, and YX356.

All method requirements specified in the USEPA Contract Laboratory Program (CLP) Statement of Work (SOW) for Organic Analysis, OLM03.2, have been met. This report was prepared according to the SOW and the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

II. Validation Summary

	VOA		BNA	
	Acceptable	Comment	Acceptable	Comment
HOLDING TIMES	[YES]	[ ]	[YES]	[ ]
GC/MS TUNE/GC PERFORMANCE	[YES]	[ ]	[YES]	[ ]
CALIBRATIONS	[NO]	[E]	[NO]	[F]
FIELD QC	[NO]	[C]	[NO]	[D,I]
LABORATORY BLANKS	[NO]	[C]	[NO]	[D]
SURROGATES	[YES]	[ ]	[YES]	[ ]
MATRIX SPIKE/DUPLICATES	[YES]	[ ]	[YES]	[H]
INTERNAL STANDARDS	[YES]	[ ]	[NO]	[A,G]
COMPOUND IDENTIFICATION	[YES]	[J]	[YES]	[J]
COMPOUND QUANTITATION	[YES]	[B]	[YES]	[B]
SYSTEM PERFORMANCE	[YES]	[ ]	[YES]	[ ]

N/A = Not Applicable

III. Validity and Comments

A. The quantitation limits for the following semivolatile target analytes are rejected due to low internal standard areas. The results are flagged "R" in Table 1A.

- 4,6-Dinitro-2-methylphenol, N-nitrosodiphenylamine, 4-bromophenyl phenyl ether, hexachlorobenzene, carbazole, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene, and benzo(g,h,i)perylene in sample YX351

- Butylbenzylphthalate, 3,3'-dichlorobenzidine, benzo(a)anthracene, and chrysene in samples YX351 and YX352
- bis(2-Ethylhexyl)phthalate in sample YX352

The internal standard areas for the samples listed above fell below the quality control (QC) advisory criteria, as shown below.

Sample	Internal Standard	Area	QC Limits
YX351	Phenanthrene-d_{10}	20247	46342-185368
	Chrysene-d_{12}	3104	12447-49788
	Perylene-d_{12}	1665	6742-26966
YX352	Chrysene-d_{12}	4798	12447-49788

The extremely low area counts reported for the internal standards indicate a severe loss of sensitivity. The results for the nondetected target analytes listed above are rejected.

Low area counts were observed in both the original and the dilution analyses of sample YX351. Sample YX352 was reanalyzed due to the low internal standard areas in accordance with SOW requirements. The results from the original analysis of sample YX352 are presented in Table 1A in order to minimize the number of rejected data points.

Internal standards, introduced into every calibration standard, blank, sample, and QC sample, monitor changes in analyte response due to matrix effects and fluctuations in instrument sensitivity throughout the analytical sequence. Internal standards are used to quantitate the concentration of target analytes and surrogate standards.

B. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

C. The detected results for the following volatile target analytes are qualified as nondetected and estimated due to laboratory, equipment, and field blank contamination. The results are flagged "U,J" in Table 1A.

- Methylene chloride in all of the samples

Methylene chloride was found in field blank YX331, equipment blank YX332, laboratory method blanks VBLKDN, VBLKDO, and storage blank VHBLKDP (see Table 1A and Additional Comments for concentrations). The results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the

sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

A laboratory method blank is laboratory reagent water or baked sand for solid matrices analyzed with all reagents, surrogates, and internal standards and carried through the same sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during extraction and analysis.

A storage blank is laboratory reagent water stored in a vial in the same area as the field samples. The storage blank is used to determine the level of contamination introduced by the laboratory during sample storage prior to analysis.

An equipment blank is clean water that has been collected as a sample using decontaminated sampling equipment. The intent of an equipment blank is to monitor for contamination introduced by the sampling activity, although any laboratory introduced contamination will also be present.

A field blank is clean water prepared as a sample in the field by the sampler and shipped to the laboratory with the samples. A field blank is intended to detect contaminants that may have been introduced in the field, although any laboratory introduced contamination will also be present. Contaminants that are found in the field blank which are absent in the laboratory method blank could be indicative of a field QC problem, a deficiency in the bottle preparation procedure, a difference in preparation of the laboratory and field blanks, or other indeterminate error.

D. The detected results for the following semivolatile target analytes are qualified as nondetected and estimated due to laboratory and equipment blank contamination. The results are flagged "U,J" in Table 1A.

- Di-n-butylphthalate in samples YX339, YX341 through YX348, YX352, YX355, and YX356
- bis(2-Ethylhexyl)phthalate in sample YX355
- Di-n-octylphthalate in samples YX339, YX343, YX345, YX347, YX351, and YX352

Di-n-butylphthalate was found in laboratory method blank SBLKEZ and and equipment blank YX330. Di-n-octylphthalate and bis(2-ethylhexyl)phthalate were found in laboratory method blank SBLKEZ and equipment blank YX330, respectively. (See Table 1A and Additional Comments for concentrations.) The results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

E. The quantitation limits for the following volatile target analytes are estimated due to large percent differences (%Ds) in the continuing calibrations. The results are flagged "J" in Table 1A.

- 2-Butanone and bromodichloromethane in samples YX339, YX340, YX341, YX344 through YX348, YX355, YX356, and method blank VBLKDO
- trans-1,3-Dichloropropene in samples YX339, YX340, YX341, YX344 through YX348, YX355, YX356, method blanks VBLKDO, VBLKDP, and storage blank VHBLKDP

Percent differences of -26.0, +26.2, and -31.3 were observed for 2-butanone, bromodichloromethane, and trans-1,3-dichloropropene, respectively, in the continuing calibration performed December 16, 1996. A %D of -36.8 was also observed for trans-1,3-dichloropropene in the continuing calibration performed December 17, 1996. These values exceed the ±25.0% QC advisory validation criterion.

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

F. The quantitation limits for the following semivolatile target analytes are estimated due to large %Ds in the continuing calibration. The results are flagged "J" in Table 1A.

- Pyrene and di-n-octylphthalate in sample YX340

Percent differences of -25.3 and -28.4 were observed for pyrene and di-n-octylphthalate, respectively, in the continuing calibration performed December 31, 1996. These values exceed the ±25.0% QC advisory validation criterion.

G. The detected results and quantitation limits for the following semivolatile target analytes are estimated due to low internal standard areas. The results are flagged "J" in Table 1A.

- Hexachlorocyclopentadiene, 2,4,6-trichlorophenol, 2,4,5-trichlorophenol, 2-chloronaphthalene, 2-nitroaniline, dimethylphthalate, acenaphthylene, 2,6-dinitrotoluene, 3-nitroaniline, acenaphthene, 2,4-dinitrophenol, 4-nitrophenol, dibenzofuran, 2,4-dinitrotoluene, diethylphthalate, 4-chlorophenyl phenyl ether, fluorene, 4-nitroaniline, and bis(2-ethylhexyl)phthalate in sample YX351
- 4,6-Dinitro-2-methylphenol, N-nitrosodiphenylamine, 4-bromophenyl phenyl ether, hexachlorobenzene, carbazole, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene, and benzo(g,h,i)perylene in sample YX352
- Pentachlorophenol, phenanthrene, anthracene, di-n-butylphthalate, fluoranthene, pyrene, and di-n-octylphthalate in samples YX351 and YX352

The internal standard areas for the samples listed above fell below the QC advisory criteria, as shown below.

Sample	Internal Standard	Area	QC Limits
YX351	Acenaphthene-d_{10}	26584	30016-120064
	Phenanthrene-d_{10}	20247	46342-185368
	Chrysene-d_{12}	3104	12447-49788
	Perylene-d_{12}	1665	6742-26966
YX352	Phenanthrene-d_{10}	24735	46342-185368
	Chrysene-d_{12}	4798	12447-49788
	Perylene-d_{12}	3422	6742-26966

The detected results and quantitation limits for the samples listed above are considered quantitatively questionable. Where the results are nondetected, false negatives may exist.

H. The matrix spike result for 2,4-dinitrotoluene in QC sample YX342MS did not meet the criteria for accuracy specified in the SOW. The percent recoveries for 2,4-dinitrotoluene are presented below.

Analyte	YX342MS %Recovery	YX342MSD %Recovery	QC limits %Recovery
2,4-Dinitrotoluene	100	86	28-89

The results obtained may indicate poor laboratory technique, sample nonhomogeneity, or matrix effects which may interfere with accurate analysis. Although the recovery for 2,4-dinitrotoluene in QC sample YX342MS is above the QC limits, this recovery does not indicate an analytical deficiency.

Matrix spike sample analysis provides information about the effect of the sample matrix on sample preparation and measurement.

I. bis(2-Ethylhexyl)phthalate was detected in field duplicate sample YX341 at a concentration of 2300 µg/Kg but was not detected in the associated field duplicate sample YX355. A relative percent difference (RPD) value was not calculated. The imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix, sample nonhomogeneity, method defects, or poor sampling or laboratory technique. The effect on the quality of the data is not known.

The analysis of field duplicate samples is a measure of both field and analytical precision.

J. Although not detected in any associated blanks, acetone and phthalates have been commonly found as contaminants in the field and in many laboratories. The user should note that the analytes found in the samples listed below may be artifacts.

- Acetone in samples YX339 through YX344, YX346, YX347, YX348, YX352, and YX356
- Diethylphthalate in samples YX339 through YX348, YX351, YX355, and YX356
- Di-n-butylphthalate in sample YX351
- Butylbenzylphthalate in samples YX341 and YX344
- bis(2-Ethylhexyl)phthalate in samples YX340, YX341, YX343 through YX346, YX348, YX351, and YX356

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #02
Site: Victoria Golf Course
Lab.: American Technical & Analytical Services (ATAS)
Reviewer: Adriane Scheele, ESAT/Lockheed
Date: February 10, 1997

Analysis Type: Low Level Soil Samples for Volatiles

Concentration in µg/Kg

Station Location	SS-1-10			SS-1-20			SS-2-10			SS-2-20			SS-3-10		
Sample I.D.	YX339 D1			YX340			YX341 D2			YX342			YX343 BG		
Date of Collection	12/10/96			12/10/96			12/9/96			12/9/96			12/10/96		
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	12 U			12 U			11 U			13 U			14 U		
Bromomethane	12 U			12 U			11 U			13 U			14 U		
Vinyl chloride	12 U			12 U			11 U			13 U			14 U		
Chloroethane	12 U			12 U			11 U			13 U			14 U		
Methylene chloride	27 U	J	C	35 U	J	C	33 U	J	C	16 U	J	C	18 U	J	C
Acetone	6 L	J	BJ	4 L	J	BJ	3 L	J	BJ	43		J	26		J
Carbon disulfide	12 U			12 U			11 U			13 U			14 U		
1,1-Dichloroethene	12 U			12 U			11 U			13 U			14 U		
1,1-Dichloroethane	12 U			12 U			11 U			13 U			14 U		
1,2-Dichloroethene (total)	12 U			12 U			11 U			13 U			14 U		
Chloroform	12 U			12 U			11 U			13 U			14 U		
1,2-Dichloroethane	12 U			12 U			11 U			13 U			14 U		
2-Butanone	12 U	J	E	12 U	J	E	11 U	J	E	13 U			14 U		
1,1,1-Trichloroethane	12 U			12 U			11 U			13 U			14 U		
Carbon tetrachloride	12 U			12 U			11 U			13 U			14 U		
Bromodichloromethane	12 U	J	E	12 U	J	E	11 U	J	E	13 U			14 U		
1,2-Dichloropropane	12 U			12 U			11 U			13 U			14 U		
cis-1,3-Dichloropropene	12 U			12 U			11 U			13 U			14 U		
Trichloroethene	12 U			12 U			11 U			13 U			14 U		
Dibromochloromethane	12 U			12 U			11 U			13 U			14 U		
1,1,2-Trichloroethane	12 U			12 U			11 U			13 U			14 U		
Benzene	12 U			12 U			11 U			13 U			14 U		
trans-1,3-Dichloropropene	12 U	J	E	12 U	J	E	11 U	J	E	13 U			14 U		
Bromoform	12 U			12 U			11 U			13 U			14 U		
4-Methyl-2-pentanone	12 U			12 U			11 U			13 U			14 U		
2-Hexanone	12 U			12 U			11 U			13 U			14 U		
Tetrachloroethene	12 U			12 U			11 U			13 U			14 U		
1,1,2,2-Tetrachloroethane	12 U			12 U			11 U			13 U			14 U		
Toluene	12 U			12 U			11 U			13 U			14 U		
Chlorobenzene	12 U			12 U			11 U			13 U			14 U		
Ethylbenzene	12 U			12 U			3 L	J	B	13 U			14 U		
Styrene	12 U			12 U			11 U			13 U			14 U		
Xylene (total)	12 U			12 U			13			13 U			14 U		
Percent Solids	84 %			85 %			88 %			79 %			70 %		

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank
TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #02
Site: Victoria Golf Course
Lab.: American Technical & Analytical Services (ATAS)
Reviewer: Adriane Scheele, ESAT/Lockheed
Date: February 10, 1997

Analysis Type: Low Level Soil Samples for Volatiles

Concentration in µg/Kg

Station Location	SS-3-20			SS-4-10			SS-4-20			SS-5-10			SS-5-20		
Sample I.D.	YX344 BG			YX345 BG			YX346 BG			YX347			YX348		
Date of Collection	12/10/96			12/10/96			12/10/96			12/10/96			12/10/96		
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	12 U			12 U			12 U			12 U			12 U		
Bromomethane	12 U			12 U			12 U			12 U			12 U		
Vinyl chloride	12 U			12 U			12 U			12 U			12 U		
Chloroethane	12 U			12 U			12 U			12 U			12 U		
~~Methylene chloride~~	~~12 U~~	~~J~~	~~C~~	~~12 U~~	~~J~~	~~C~~	~~12 U~~	~~J~~	~~C~~	~~13 U~~	~~J~~	~~C~~	~~14 U~~	~~J~~	~~C~~
~~Acetone~~	~~9 L~~	~~J~~	~~BJ~~	~~12 U~~			~~4 L~~	~~J~~	~~BJ~~	~~5 L~~	~~J~~	~~BJ~~	~~8 L~~	~~J~~	~~BJ~~
Carbon disulfide	12 U			12 U			12 U			12 U			12 U		
1,1-Dichloroethene	12 U			12 U			12 U			12 U			12 U		
1,1-Dichloroethane	12 U			12 U			12 U			12 U			12 U		
1,2-Dichloroethene (total)	12 U			12 U			12 U			12 U			12 U		
Chloroform	12 U			12 U			12 U			12 U			12 U		
1,2-Dichloroethane	12 U			12 U			12 U			12 U			12 U		
2-Butanone	12 U	J	E	12 U	J	E	12 U	J	E	12 U	J	E	12 U	J	E
1,1,1-Trichloroethane	12 U			12 U			12 U			12 U			12 U		
Carbon tetrachloride	12 U			12 U			12 U			12 U			12 U		
Bromodichloromethane	12 U	J	E	12 U	J	E	12 U	J	E	12 U	J	E	12 U	J	E
1,2-Dichloropropane	12 U			12 U			12 U			12 U			12 U		
cis-1,3-Dichloropropene	12 U			12 U			12 U			12 U			12 U		
Trichloroethene	12 U			12 U			12 U			12 U			12 U		
Dibromochloromethane	12 U			12 U			12 U			12 U			12 U		
1,1,2-Trichloroethane	12 U			12 U			12 U			12 U			12 U		
Benzene	12 U			12 U			12 U			12 U			12 U		
trans-1,3-Dichloropropene	12 U	J	E	12 U	J	E	12 U	J	E	12 U	J	E	12 U	J	E
Bromoform	12 U			12 U			12 U			12 U			12 U		
4-Methyl-2-pentanone	12 U			12 U			12 U			12 U			12 U		
2-Hexanone	12 U			12 U			12 U			12 U			12 U		
Tetrachloroethene	12 U			12 U			12 U			12 U			12 U		
1,1,2,2-Tetrachloroethane	12 U			12 U			12 U			12 U			12 U		
Toluene	12 U			12 U			12 U			12 U			12 U		
Chlorobenzene	12 U			12 U			12 U			12 U			12 U		
Ethylbenzene	12 U			12 U			12 U			12 U			12 U		
Styrene	12 U			12 U			12 U			12 U			12 U		
Xylene (total)	12 U			12 U			12 U			12 U			12 U		
Percent Solids	81 %			85 %			80 %			80 %			82 %		

All 1:1 Blanks Also

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank
TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #02
Site: Victoria Golf Course
Lab.: American Technical & Analytical Services (ATAS)
Reviewer: Adriane Scheele, ESAT/Lockheed
Date: February 10, 1997

Analysis Type: Low Level Soil Samples for Volatiles

Concentration in µg/Kg

Station Location	SS-7-10			SS-7-20			SS-9-10			SS-10-10			Method Blank		
Sample I.D.	YX351			YX352			YX355 D2			YX356 D1			VBLKDN		
Date of Collection	12/9/96			12/9/96			12/9/96			12/10/96					
Volatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Chloromethane	12 U			15 U			12 U			12 U			10 U		
Bromomethane	12 U			15 U			12 U			12 U			10 U		
Vinyl chloride	12 U			15 U			12 U			12 U			10 U		
Chloroethane	12 U			15 U			12 U			12 U			10 U		
~~Methylene chloride~~	~~16 U~~	~~J~~	~~C~~	~~15 U~~	~~J~~	~~C~~	~~12 U~~	~~J~~	~~C~~	~~32 U~~	~~J~~	~~C~~	~~7 L~~	~~J~~	~~BC~~
Acetone	200			~~24~~		~~J~~	~~12 U~~			~~3 L~~	~~J~~	~~BJ~~	~~10 U~~		
Carbon disulfide	12 U			15 U			12 U			12 U			10 U		
1,1-Dichloroethene	12 U			15 U			12 U			12 U			10 U		
1,1-Dichloroethane	12 U			15 U			12 U			12 U			10 U		
1,2-Dichloroethene (total)	12 U			15 U			12 U			12 U			10 U		
Chloroform	12 U			15 U			12 U			12 U			10 U		
1,2-Dichloroethane	12 U			15 U			12 U			12 U			10 U		
2-Butanone	12 U			15 U			12 U	J	E	12 U	J	E	10 U		
1,1,1-Trichloroethane	12 U			15 U			12 U			12 U			10 U		
Carbon tetrachloride	12 U			15 U			12 U			12 U			10 U		
Bromodichloromethane	12 U			15 U			12 U	J	E	12 U	J	E	10 U		
1,2-Dichloropropane	12 U			15 U			12 U			12 U			10 U		
cis-1,3-Dichloropropene	12 U			15 U			12 U			12 U			10 U		
Trichloroethene	12 U			15 U			12 U			12 U			10 U		
Dibromochloromethane	12 U			15 U			12 U			12 U			10 U		
1,1,2-Trichloroethane	12 U			15 U			12 U			12 U			10 U		
Benzene	12 U			15 U			12 U			12 U			10 U		
trans-1,3-Dichloropropene	12 U			15 U			12 U	J	E	12 U	J	E	10 U		
Bromoform	12 U			15 U			12 U			12 U			10 U		
4-Methyl-2-pentanone	12 U			15 U			12 U			12 U			10 U		
2-Hexanone	12 U			15 U			12 U			12 U			10 U		
Tetrachloroethene	12 U			15 U			12 U			12 U			10 U		
1,1,2,2-Tetrachloroethane	12 U			15 U			12 U			12 U			10 U		
Toluene	30			15 U			12 U			12 U			10 U		
Chlorobenzene	12 U			15 U			12 U			12 U			10 U		
Ethylbenzene	79			15 U			12 U			12 U			10 U		
Styrene	12 U			15 U			12 U			12 U			10 U		
Xylene (total)	190			15 U			12 U			12 U			10 U		
Percent Solids	84 %			68 %			85 %			85 %			N/A		

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank
TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #02
Site: Victoria Golf Course
Lab.: American Technical & Analytical Services (ATAS)
Reviewer: Adriane Scheele, ESAT/Lockheed
Date: February 10, 1997

Analysis Type: Low Level Soil Samples for Volatiles

Concentration in µg/Kg

Sample I.D.	Method Blank VBLKDO			CRQL											
Volatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Chloromethane	10 U			10											
Bromomethane	10 U			10											
Vinyl chloride	10 U			10											
Chloroethane	10 U			10											
Methylene chloride	4 L	J	BC	10											
Acetone	10 U			10											
Carbon disulfide	10 U			10											
1,1-Dichloroethene	10 U			10											
1,1-Dichloroethane	10 U			10											
1,2-Dichloroethene (total)	10 U			10											
Chloroform	10 U			10											
1,2-Dichloroethane	10 U			10											
2-Butanone	10 U	J	E	10											
1,1,1-Trichloroethane	10 U			10											
Carbon tetrachloride	10 U			10											
Bromodichloromethane	10 U	J	E	10											
1,2-Dichloropropane	10 U			10											
cis-1,3-Dichloropropene	10 U			10											
Trichloroethene	10 U			10											
Dibromochloromethane	10 U			10											
1,1,2-Trichloroethane	10 U			10											
Benzene	10 U			10											
trans-1,3-Dichloropropene	10 U	J	E	10											
Bromoform	10 U			10											
4-Methyl-2-pentanone	10 U			10											
2-Hexanone	10 U			10											
Tetrachloroethene	10 U			10											
1,1,2,2-Tetrachloroethane	10 U			10											
Toluene	10 U			10											
Chlorobenzene	10 U			10											
Ethylbenzene	10 U			10											
Styrene	10 U			10											
Xylene (total)	10 U			10											

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank
TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #02
Site: Victoria Golf Course
Lab.: American Technical & Analytical Services (ATAS)
Reviewer: Adriane Scheele, ESAT/Lockheed
Date: February 10, 1997

Analysis Type: Low Level Water Blanks for Volatiles

Concentration in µg/L

Sample I.D.	Method Blank VBLKDP			Storage Blank VHBLKDP			CRQL								
Volatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Chloromethane	10 U			10 U			10								
Bromomethane	10 U			10 U			10								
Vinyl chloride	10 U			10 U			10								
Chloroethane	10 U			10 U			10								
Methylene chloride	10 U			7 L	J	BC	10								
Acetone	10 U			10 U			10								
Carbon disulfide	10 U			10 U			10								
1,1-Dichloroethene	10 U			10 U			10								
1,1-Dichloroethane	10 U			10 U			10								
1,2-Dichloroethene (total)	10 U			10 U			10								
Chloroform	10 U			10 U			10								
1,2-Dichloroethane	10 U			10 U			10								
2-Butanone	10 U			10 U			10								
1,1,1-Trichloroethane	10 U			10 U			10								
Carbon tetrachloride	10 U			10 U			10								
Bromodichloromethane	10 U			10 U			10								
1,2-Dichloropropane	10 U			10 U			10								
cis-1,3-Dichloropropene	10 U			10 U			10								
Trichloroethene	10 U			10 U			10								
Dibromochloromethane	10 U			10 U			10								
1,1,2-Trichloroethane	10 U			10 U			10								
Benzene	10 U			10 U			10								
trans-1,3-Dichloropropene	10 U	J	E	10 U	J	E	10								
Bromoform	10 U			10 U			10								
4-Methyl-2-pentanone	10 U			10 U			10								
2-Hexanone	10 U			10 U			10								
Tetrachloroethene	10 U			10 U			10								
1,1,2,2-Tetrachloroethane	10 U			10 U			10								
Toluene	10 U			10 U			10								
Chlorobenzene	10 U			10 U			10								
Ethylbenzene	10 U			10 U			10								
Styrene	10 U			10 U			10								
Xylene (total)	10 U			10 U			10								

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limit
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank
TB-Trip Blank, BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #02
Site: Victoria Golf Course
Lab.: American Technical & Analytical Services (ATAS)
Reviewer: Adriane Scheele, ESAT/Lockheed
Date: February 10, 1997

Analysis Type: Low Level Soil Samples for Semivolatiles

Concentration in µg/Kg

Station Location	SS-1-10			SS-1-20			SS-2-10			SS-2-20			SS-3-10			SS-3-20			SS-4-10		
Sample I.D.	YX339 D1			YX340			YX341 D2			YX342			YX343 BG			YX344 BG			YX345 BG		
Date of Collection	12/10/96			12/10/96			12/9/96			12/9/96			12/10/96			12/10/96			12/10/96		
Semivolatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Phenol	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
bis(2-Chloroethyl)ether	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2-Chlorophenol	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
1,3-Dichlorobenzene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
1,4-Dichlorobenzene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
1,2-Dichlorobenzene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2-Methylphenol	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2,2'-oxybis(1-Chloropropane)	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
4-Methylphenol	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
N-Nitroso-di-n-propylamine	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Hexachloroethane	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Nitrobenzene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Isophorone	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2-Nitrophenol	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2,4-Dimethylphenol	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
bis(2-Chloroethoxy)methane	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2,4-Dichlorophenol	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
1,2,4-Trichlorobenzene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Naphthalene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
4-Chloroaniline	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Hexachlorobutadiene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
4-Chloro-3-methylphenol	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2-Methylnaphthalene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Hexachlorocyclopentadiene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2,4,6-Trichlorophenol	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2,4,5-Trichlorophenol	990 U			980 U			940 U			1000 U			1200 U			1000 U			980 U		
2-Chloronaphthalene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2-Nitroaniline	990 U			980 U			940 U			1000 U			1200 U			1000 U			980 U		
Dimethylphthalate	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Acenaphthylene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2,6-Dinitrotoluene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
3-Nitroaniline	990 U			980 U			940 U			1000 U			1200 U			1000 U			980 U		

Station Location	SS-1-10			SS-1-20			SS-2-10			SS-2-20			SS-3-10			SS-3-20			SS-4-10		
Sample I.D.	YX339 D1			YX340			YX341 D2			YX342			YX343 BG			YX344 BG			YX345 BG		
Date of Collection	12/10/96			12/10/96			12/9/96			12/9/96			12/10/96			12/10/96			12/10/96		
Semivolatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Acenaphthene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2,4-Dinitrophenol	990 U			980 U			940 U			1000 U			1200 U			1000 U			980 U		
4-Nitrophenol	990 U			980 U			940 U			1000 U			1200 U			1000 U			980 U		
Dibenzofuran	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2,4-Dinitrotoluene	390 U			390 U			380 U			420 U		H	470 U			410 U			390 U		
Diethylphthalate	24 L	J	BJ	22 L	J	BJ	23 L	J	BJ	38 L	J	BJ	30 L	J	BJ	23 L	J	BJ	26 L	J	BJ
4-Chlorophenyl phenyl ether	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Fluorene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
4-Nitroaniline	990 U			980 U			940 U			1000 U			1200 U			1000 U			980 U		
4,6-Dinitro-2-methylphenol	990 U			980 U			940 U			1000 U			1200 U			1000 U			980 U		
N-Nitrosodiphenylamine	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
4-Bromophenyl phenyl ether	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Hexachlorobenzene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Pentachlorophenol	990 U			980 U			940 U			1000 U			1200 U			1000 U			980 U		
Phenanthrene	390 U			390 U			54 L	J	B	420 U			470 U			410 U			390 U		
Anthracene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Carbazole	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Di-n-butylphthalate	390 U	J	D	390 U			380 U	J	D	420 U	J	D	470 U	J	D	410 U	J	D	390 U	J	D
Fluoranthene	390 U			390 U			38 L	J	B	420 U			470 U			410 U			390 U		
Pyrene	390 U			390 U	J	F	61 L	J	B	420 U			470 U			410 U			390 U		
Butylbenzylphthalate	390 U			390 U			32 L	J	BJ	420 U			470 U			22 L	J	BJ	390 U		
3,3'-Dichlorobenzidine	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Benzo(a)anthracene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Chrysene	390 U			390 U			38 L	J	B	420 U			470 U			410 U			390 U		
bis(2-Ethylhexyl)phthalate	390 U			88 L	J	BJ	2300		IJ	420 U			61 L	J	BJ	40 L	J	BJ	49 L	J	BJ
Di-n-octylphthalate	390 U	J	D	390 U	J	F	380 U			420 U			470 U	J	D	410 U			390 U	J	D
Benzo(b)fluoranthene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Benzo(k)fluoranthene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Benzo(a)pyrene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Indeno(1,2,3-cd)pyrene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Dibenz(a,h)anthracene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Benzo(g,h,i)perylene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Percent Solids	84 %			85 %			88 %			79 %			70 %			81 %			85 %		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #02
Site: Victoria Golf Course
Lab.: American Technical & Analytical Services (ATAS)
Reviewer: Adriane Scheele, ESAT/Lockheed
Date: February 10, 1997

Analysis Type: Low Level Soil Samples for Semivolatiles

Concentration in µg/Kg

Station Location	SS-4-20			SS-5-10			SS-5-20			SS-7-10			SS-7-20			SS-9-10			SS-10-10		
Sample I.D.	YX346 BG			YX347			YX348			YX351			YX352			YX355 D2			YX356 D1		
Date of Collection	12/10/96			12/10/96			12/10/96			12/9/96			12/9/96			12/9/96			12/10/96		
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Phenol	410 U			410 U			400 U			9400			800			390 U			390 U		
bis(2-Chloroethyl)ether	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
2-Chlorophenol	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
1,3-Dichlorobenzene	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
1,4-Dichlorobenzene	410 U			410 U			400 U			29 L	J	B	50 L	J	B	390 U			390 U		
1,2-Dichlorobenzene	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
2-Methylphenol	410 U			410 U			400 U			100 L	J	B	480 U			390 U			390 U		
2,2'-oxybis(1-Chloropropane)	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
4-Methylphenol	410 U			410 U			400 U			5900			1900			390 U			390 U		
N-Nitroso-di-n-propylamine	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
Hexachloroethane	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
Nitrobenzene	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
Isophorone	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
2-Nitrophenol	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
2,4-Dimethylphenol	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
bis(2-Chloroethoxy)methane	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
2,4-Dichlorophenol	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
1,2,4-Trichlorobenzene	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
Naphthalene	410 U			410 U			400 U			900			1100			390 U			390 U		
4-Chloroaniline	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
Hexachlorobutadiene	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
4-Chloro-3-methylphenol	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
2-Methylnaphthalene	410 U			410 U			400 U			250 L	J	B	460 L	J	B	390 U			390 U		
Hexachlorocyclopentadiene	410 U			410 U			400 U			390 U	J	G	480 U			390 U			390 U		
2,4,6-Trichlorophenol	410 U			410 U			400 U			390 U	J	G	480 U			390 U			390 U		
2,4,5-Trichlorophenol	1000 U			1000 U			1000 U			990 U	J	G	1200 U			980 U			980 U		
2-Chloronaphthalene	410 U			410 U			400 U			390 U	J	G	480 U			390 U			390 U		
2-Nitroaniline	1000 U			1000 U			1000 U			990 U	J	G	1200 U			980 U			980 U		
Dimethylphthalate	410 U			410 U			400 U			390 U	J	G	480 U			390 U			390 U		
Acenaphthylene	410 U			410 U			400 U			390 U	J	G	480 U			390 U			390 U		
2,6-Dinitrotoluene	410 U			410 U			400 U			390 U	J	G	480 U			390 U			390 U		
3-Nitroaniline	1000 U			1000 U			1000 U			990 U	J	G	1200 U			980 U			980 U		

Station Location	SS-4-20			SS-5-10			SS-5-20			SS-7-10			SS-7-20			SS-9-10			SS-10-10		
Sample I.D.	YX346 BG			YX347			YX348			YX351			YX352			YX355 D2			YX356 D1		
Date of Collection	12/10/96			12/10/96			12/10/96			12/9/96			12/9/96			12/9/96			12/10/96		
Semivolatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Acenaphthene	410 U			410 U			400 U			58 L	J	BG	54 L	J	B	390 U			390 U		
2,4-Dinitrophenol	1000 U			1000 U			1000 U			990 U	J	G	1200 U			980 U			980 U		
4-Nitrophenol	1000 U			1000 U			1000 U			990 U	J	G	1200 U			980 U			980 U		
Dibenzofuran	410 U			410 U			400 U			390 U	J	G	40 L	J	B	390 U			390 U		
2,4-Dinitrotoluene	410 U			410 U			400 U			390 U	J	G	480 U			390 U			390 U		
Diethylphthalate	25 L	J	BJ	36 L	J	BJ	24 L	J	BJ	78 L	J	BGJ	480 U			23 L	J	BJ	29 L	J	BJ
4-Chlorophenyl phenyl ether	410 U			410 U			400 U			390 U	J	G	480 U			390 U			390 U		
Fluorene	410 U			410 U			400 U			140 L	J	BG	98 L	J	B	390 U			390 U		
4-Nitroaniline	1000 U			1000 U			1000 U			990 U	J	G	1200 U			980 U			980 U		
4,6-Dinitro-2-methylphenol	1000 U			1000 U			1000 U			990 U	R	A	1200 U	J	G	980 U			980 U		
N-Nitrosodiphenylamine	410 U			410 U			400 U			390 U	R	A	550	J	G	390 U			390 U		
4-Bromophenyl phenyl ether	410 U			410 U			400 U			390 U	R	A	480 U	J	G	390 U			390 U		
Hexachlorobenzene	410 U			410 U			400 U			390 U	R	A	480 U	J	G	390 U			390 U		
Pentachlorophenol	1000 U			1000 U			1000 U			390 L	J	BG	1200 U	J	G	980 U			980 U		
Phenanthrene	410 U			410 U			400 U			600	J	G	490	J	G	390 U			390 U		
Anthracene	410 U			410 U			400 U			64 L	J	BG	88 L	J	BG	390 U			390 U		
Carbazole	410 U			410 U			400 U			390 U	R	A	480 U	J	G	390 U			390 U		
Di-n-butylphthalate	410 U	J	D	410 U	J	D	400 U	J	D	270 L	J	BGJ	480 U	J	DG	390 U	J	D	390 U	J	D
Fluoranthene	410 U			410 U			400 U			120 L	J	BG	240 L	J	BG	390 U			390 U		
Pyrene	410 U			410 U			400 U			200 L	J	BG	270 L	J	BG	390 U			390 U		
Butylbenzylphthalate	410 U			410 U			400 U			390 U	R	A	480 U	R	A	390 U			390 U		
3,3'-Dichlorobenzidine	410 U			410 U			400 U			390 U	R	A	480 U	R	A	390 U			390 U		
Benzo(a)anthracene	410 U			410 U			400 U			390 U	R	A	480 U	R	A	390 U			390 U		
Chrysene	410 U			410 U			400 U			390 U	R	A	480 U	R	A	390 U			390 U		
bis(2-Ethylhexyl)phthalate	41 L	J	BJ	410 U			47 L	J	BJ	750	J	GJ	480 U	R	A	390 U	J	DI	130 L	J	BJ
Di-n-octylphthalate	410 U			410 U	J	D	400 U			390 U	J	DG	480 U	J	DG	390 U			390 U		
Benzo(b)fluoranthene	410 U			410 U			400 U			390 U	R	A	480 U	J	G	390 U			390 U		
Benzo(k)fluoranthene	410 U			410 U			400 U			390 U	R	A	480 U	J	G	390 U			390 U		
Benzo(a)pyrene	410 U			410 U			400 U			390 U	R	A	480 U	J	G	390 U			390 U		
Indeno(1,2,3-cd)pyrene	410 U			410 U			400 U			390 U	R	A	480 U	J	G	390 U			390 U		
Dibenz(a,h)anthracene	410 U			410 U			400 U			390 U	R	A	480 U	J	G	390 U			390 U		
Benzo(g,h,i)perylene	410 U			410 U			400 U			390 U	R	A	480 U	J	G	390 U			390 U		
Percent Solids	80 %			80 %			82 %			84 %			68 %			85 %			85 %		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #02
Site: Victoria Golf Course
Lab.: American Technical & Analytical Services (ATAS)
Reviewer: Adriane Scheele, ESAT/Lockheed
Date: February 10, 1997

Analysis Type: Low Level Soil Samples for Semivolatiles

Concentration in µg/Kg

Sample I.D.	Method Blank SBLKEZ			CRQL																	
Semivolatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Phenol	330 U			330																	
bis(2-Chloroethyl)ether	330 U			330																	
2-Chlorophenol	330 U			330																	
1,3-Dichlorobenzene	330 U			330																	
1,4-Dichlorobenzene	330 U			330																	
1,2-Dichlorobenzene	330 U			330																	
2-Methylphenol	330 U			330																	
2,2'-oxybis(1-Chloropropane)	330 U			330																	
4-Methylphenol	330 U			330																	
N-Nitroso-di-n-propylamine	330 U			330																	
Hexachloroethane	330 U			330																	
Nitrobenzene	330 U			330																	
Isophorone	330 U			330																	
2-Nitrophenol	330 U			330																	
2,4-Dimethylphenol	330 U			330																	
bis(2-Chloroethoxy)methane	330 U			330																	
2,4-Dichlorophenol	330 U			330																	
1,2,4-Trichlorobenzene	330 U			330																	
Naphthalene	330 U			330																	
4-Chloroaniline	330 U			330																	
Hexachlorobutadiene	330 U			330																	
4-Chloro-3-methylphenol	330 U			330																	
2-Methylnaphthalene	330 U			330																	
Hexachlorocyclopentadiene	330 U			330																	
2,4,6-Trichlorophenol	330 U			330																	
2,4,5-Trichlorophenol	830 U			830																	
2-Chloronaphthalene	330 U			330																	
2-Nitroaniline	830 U			830																	
Dimethylphthalate	330 U			330																	
Acenaphthylene	330 U			330																	
2,6-Dinitrotoluene	330 U			330																	
3-Nitroaniline	830 U			830																	

Sample I.D.	Method Blank SBLKEZ			CRQL																	
Semivolatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Acenaphthene	330 U			330																	
2,4-Dinitrophenol	830 U			830																	
4-Nitrophenol	830 U			830																	
Dibenzofuran	330 U			330																	
2,4-Dinitrotoluene	330 U			330																	
Diethylphthalate	330 U			330																	
4-Chlorophenyl phenyl ether	330 U			330																	
Fluorene	330 U			330																	
4-Nitroaniline	830 U			830																	
4,6-Dinitro-2-methylphenol	830 U			830																	
N-Nitrosodiphenylamine	330 U			330																	
4-Bromophenyl phenyl ether	330 U			330																	
Hexachlorobenzene	330 U			330																	
Pentachlorophenol	830 U			830																	
Phenanthrene	330 U			330																	
Anthracene	330 U			330																	
Carbazole	330 U			330																	
Di-n-butylphthalate	18 L	J	BD	330																	
Fluoranthene	330 U			330																	
Pyrene	330 U			330																	
Butylbenzylphthalate	330 U			330																	
3,3'-Dichlorobenzidine	330 U			330																	
Benzo(a)anthracene	330 U			330																	
Chrysene	330 U			330																	
bis(2-Ethylhexyl)phthalate	330 U			330																	
Di-n-octylphthalate	200 L	J	BD	330																	
Benzo(b)fluoranthene	330 U			330																	
Benzo(k)fluoranthene	330 U			330																	
Benzo(a)pyrene	330 U			330																	
Indeno(1,2,3-cd)pyrene	330 U			330																	
Dibenz(a,h)anthracene	330 U			330																	
Benzo(g,h,i)perylene	330 U			330																	

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
L	Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX343

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX341

Matrix: (soil/water) SOIL Lab Sample ID: 17669.11

Sample wt/vol: 5.0 (g/mL) G Lab File ID: D7840.D

Level: (low/med) LOW Date Received: 12/11/96

% Moisture: not dec. 30 Date Analyzed: 12/13/96

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~		~~Unknown~~	~~7.316~~	~~10~~	~~J~~
2.		Unknown	8.801	11	J
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
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26.					
27.					
28.					
29.					
30.					

1. VOA target analyte

000075
AS, ESAT
1/29/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX351

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX341

Matrix: (soil/water) SOIL Lab Sample ID: 17669.05

Sample wt/vol: 5.0 (g/mL) G Lab File ID: D7836.D

Level: (low/med) LOW Date Received: 12/11/96

% Moisture: not dec. 16 Date Analyzed: 12/13/96

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: ~~22~~ 21 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	~~75-07-0~~	~~Acetaldehyde~~ Unknown	4.502	9	NJ
2.	~~110-54-3~~	~~Hexane~~	~~8.844~~	~~7~~	~~NJ~~
3.	~~108-87-2~~	~~Cyclohexane, methyl~~ Unknown	12.262	7	NJ
4.	~~3073-66-3~~	Cyclohexane, ~~1,1,3~~ trimethyl-	15.041	14	NJ
5.		Unknown	15.358	17	J
6.	~~14676-29-0~~	Heptane, ~~3~~-ethyl-~~2~~-methyl-	15.517	8	NJ
7.	111-27-3	1-Hexanol	16.461	13	NJ
8.		Unknown	16.986	77	J
9.		Unknown	17.181	78	J
10.	~~6783-92-2~~	Cyclohexane, ~~1,1,2,3~~ tetramethyl-	17.613	120	NJ
11.	~~108-67-8~~	Benzene, ~~1,3,5~~ trimethyl-	17.879	370	NJ
12.		Unknown	18.182	120	J
13.	~~95-63-6~~	Benzene, ~~1,2,4~~ trimethyl-	18.336	460	NJ
14.	~~99-87-6~~	~~Benzene, 1-methyl-4-(1-methy~~	18.656	200	NJ
15.	~~470-82-6~~	~~Eucalyptol~~ Unknown	18.829	470	NJ
16.	~~135-01-3~~	~~Benzene, 1,2-diethyl~~ Unknown	19.049	350	NJ
17.	~~527-84-4~~	~~Benzene, 1-methyl-2-(1-methy~~	19.381	350	NJ
18.		Unknown	19.625	55	JM
19.	~~1195-79-5~~	~~Bicyclo[2.2.1]heptan-2-one,~~	19.921	120	NJ
20.		Unknown	20.236	32	J
21.		Unknown	20.414	51	J
22.	~~464-48-2~~	~~Bicyclo[2.2.1]heptan-2-one,~~	20.776	120	J
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

2. common laboratory contaminant

17, 14 substituted benzene

22, 19 unknown

000121

AS, ESAT

1/29/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

YX352

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX341

Matrix: (soil/water) SOIL Lab Sample ID: 17669.04

Sample wt/vol: 5.0 (g/mL) G Lab File ID: D7835.D

Level: (low/med) LOW Date Received: 12/11/96

% Moisture: not dec. 32 Date Analyzed: 12/13/96

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: ~~3~~ 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~110-54-3~~	~~Hexane~~	~~8.826~~	~~9~~	~~NJ~~
2.	80-56-8	.alpha.-Pinene	17.130	10	NJ
3.	0-00-0	Unknown	17.819	9	J
4.		Unknown	19.888	12	J
~~5.~~	~~91-20-3~~	~~Naphthalene~~	~~21.129~~	~~14~~	~~NJ~~
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
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18.					
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26.					
27.					
28.					
29.					
30.					

1. Common laboratory contaminant
5. Semivolatile target analyte.

000155

AS, ESAT
1/29/97

1F

EPA SAMPLE NO.

YX339

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX341

Matrix: (soil/water) SOIL Lab Sample ID: 17703.11

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EE8137.D

Level: (low/med) LOW Date Received: 12/13/96

% Moisture: 16 decanted: (Y/N) N Date Extracted: 12/16/96

Concentrated Extract Volume: 500(uL) Date Analyzed: 12/30/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.7

Number TICs found: ~~11~~ 4

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~123-42-2~~	~~2-Pentanone, 4 hydroxy 4 met~~	~~4.496~~	~~13000~~	~~NJB~~
~~2.~~		~~UNKNOWN~~	~~5.200~~	~~150~~	~~JB~~
~~3.~~		~~UNKNOWN~~	~~5.274~~	~~260~~	~~JB~~
~~4.~~	~~110-13-4~~	~~2,5 Hexanedione Unknown~~	~~5.361~~	~~94~~	~~NJ~~
~~5.~~		~~UNKNOWN~~	~~5.475~~	~~140~~	~~JB~~
6.	4436-75-3	3-Hexene-2,5-dione	5.562	140	NJ
7.	~~138-86-3~~	~~Limonene~~ Unknown	6.504	160	NJ
~~8.~~		~~UNKNOWN~~	~~7.593~~	~~150~~	~~JB~~
9.	6938-94-9	Hexanedioic acid, bis(1-meth	10.052	96	NJ
10.		UNKNOWN	13.682	100	J
~~11.~~		~~UNKNOWN~~	~~14.835~~	~~92~~	~~JB~~
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

9. Hexanedioic acid, bis(1-methylethyl) ester

1,3,5,8,11 found in SBLKEZ

1-4 elute before 1st semivolatile target analyte, phenol.

000326

AS, ESAT 1/31/97

1F

EPA SAMPLE NO.

YX340

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX341

Matrix: (soil/water) SOIL Lab Sample ID: 17703.08

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EE8155.D

Level: (low/med) LOW Date Received: 12/13/96

% Moisture: 15 decanted: (Y/N) N Date Extracted: 12/16/96

Concentrated Extract Volume: 500(uL) Date Analyzed: 12/31/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.8

Number TICs found: ~~11~~ 14

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~		~~UNKNOWN~~	~~4.364~~	~~92~~	~~J~~
~~2.~~	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.484~~	~~11000~~	~~NJB~~
~~3.~~	~~111-76-2~~	~~Ethanol, 2-butoxy~~	~~5.110~~	~~87~~	~~NJ~~
~~4.~~		~~UNKNOWN~~	~~5.186~~	~~150~~	~~J~~
~~5.~~	~~110-13-4~~	~~2,5-Hexanedione~~	~~5.333~~	~~120~~	~~J~~
~~6.~~		~~UNKNOWN~~	~~5.453~~	~~120~~	~~JB~~
7.		UNKNOWN	5.535	120	J
8.		UNKNOWN	5.649	85	J
9.	~~5989-54-8~~	~~Cyclohexene, 1-methyl-4-(1-m~~	6.484	130	NJ
~~10.~~		~~UNKNOWN~~	~~7.552~~	~~140~~	~~JB~~
11.	6938-94-9	Hexanedioic acid, bis(1-meth	10.025	100	NJ
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

9. unknown

11. Hexanedioic acid, bis(1-methylethyl) ester

2,6,10 found in SBLKEZ

1-5 elute before 1st SVOA target analyte, phenol.

JV
1/9/97

AS, ESAT
1/31/97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX341

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX341

Matrix: (soil/water) SOIL Lab Sample ID: 17669.07

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EE8119.D

Level: (low/med) LOW Date Received: 12/11/96

% Moisture: 12 decanted: (Y/N) N Date Extracted: 12/16/96

Concentrated Extract Volume: 500(uL) Date Analyzed: 12/27/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

Number TICs found: ~~18~~ 7

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		~~UNKNOWN~~	~~4.390~~	~~380~~	~~J~~
2.	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.537~~	~~12000~~	~~JB~~
3.		~~UNKNOWN~~	~~5.229~~	~~140~~	~~JB~~
4.		~~UNKNOWN~~	~~5.501~~	~~100~~	~~JB~~
5.		UNKNOWN	5.578	110	JB
6.	~~620-14-4~~	Benzene, ~~1~~-ethyl-~~3~~-methyl-	5.828	120	NJ
7.	~~138-86-3~~	~~Limonene~~ Unknown	6.526	270	NJ
8.		UNKNOWN	7.083	140	J
9.		~~UNKNOWN~~	~~7.595~~	~~120~~	~~JB~~
10.		UNKNOWN	8.810	85	J
11.	6938-94-9	Hexanedioic acid, bis(1-meth	10.069	110	NJ
12.	~~57-10-3~~	~~Hexadecanoic acid~~	13.514	250	NJ
13.	~~27554-26-3~~	~~1,2-Benzenedicarboxylic acid~~	~~16.646~~	~~270~~	~~NJ~~
14.		~~UNKNOWN~~	~~16.922~~	~~970~~	~~J~~
15.		~~UNKNOWN~~	~~16.966~~	~~250~~	~~J~~
16.		~~UNKNOWN~~	~~17.038~~	~~190~~	~~J~~
17.		~~UNKNOWN~~	~~17.115~~	~~710~~	~~JB~~
18.		~~UNKNOWN~~	~~17.198~~	~~1300~~	~~JB~~
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

11. Hexanedioic acid, bis(1-methylethyl) ester
12. unknown organic acid
13-18 common laboratory contaminants (phthalates)
2,3,4,9,17,18 found in SBLKEZ.
1-3 elute before 1st SVOA target analyte, phenol.

000352

AS, ESAT 1/31/97

Alkane Report for Sample : TX341 Page: 1

Data file : EE8119.d Matrix : SOIL

	CAS #	Compound	R.T.	Estimated Conc.
1.	~~541-02-6~~	~~Cyclopentasiloxane, decamethyl~~	~~7.420~~	~~170~~
2.	~~629-59-4~~	~~Tetradecane~~ unknown alkane	12.58	130
3.	~~629-78-7~~	~~Heptadecane~~ unknown alkane	16.77	210

Concentration Units: Water: UG/L Soil: UG/KG

1. Laboratory artifact (column bleed) and found in SBLKEZ.

1-8-97

000005

AS, ESAT
1/31/97

1F

EPA SAMPLE NO.

YX342

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX341

Matrix: (soil/water) SOIL Lab Sample ID: 17669.15

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EE8131.D

Level: (low/med) LOW Date Received: 12/11/96

% Moisture: 21 decanted: (Y/N) N Date Extracted: 12/16/96

Concentrated Extract Volume: 500(uL) Date Analyzed: 12/30/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.2

Number TICs found: ~~10~~ 6

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.502~~	~~12000~~	~~NJB~~
~~2.~~		~~Unknown~~	~~5.205~~	~~150~~	~~JB~~
~~3.~~		~~Unknown~~	~~5.357~~	~~140~~	~~JB~~
~~4.~~		~~Unknown~~	~~5.477~~	~~160~~	~~JB~~
5.	4436-75-3	3-Hexene-2,5-dione	5.564	110	NJ
6.	~~611-14-3~~	~~Benzene, 1-ethyl-2-methyl~~	5.804	150	NJ
7.		Unknown	6.213	260	J
8.	~~138-86-3~~	~~Limonene~~ Unknown	6.508	360	NJ
9.	6938-94-9	Hexanedioic acid, bis(1-meth	10.052	140	NJ
10.		Unknown	24.710	1400	J
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

6. substituted benzene
9. Hexanedioic acid, bis(1-methylethyl) ester
1,4 found in SBLKEZ
1-3 elute before 1st SVOA target analyte, phenol.

000394

Alkane Report for Sample : 1X342 Page: 1

Data file : EE8131.d Matrix : SOIL

	CAS #	Compound	R.T.	Estimated Conc.
1.	124-18-5	Decane	6.076	200
2.		Unknown Alkane	7.058	130
3.	541-02-6	Cyclopentasiloxane, decamethyl-	7.406	170
4.	13475-75-7	Pentadecane, 8-hexyl-	13.71	180
5.	112-95-8	Eicosane	14.27	450
6.	629-97-0	Docosane	14.81	740
7.	55124-79-3	Heptadecane, 9-hexyl-	15.33	2200
8.	646-31-1	Tetracosane	15.82	2100
9.	7225-66-3	Tridecane, 7-hexyl-	16.30	1900
10.	13287-24-6	Nonadecane, 9-methyl-	16.76	1400
11.	593-45-3	Octadecane	17.20	1200
12.	544-85-4	Dotriacontane	17.67	770
13.	7225-64-1	Heptadecane, 9-octyl-	18.21	1000
14.	630-06-8	Hexatriacontane	18.80	630

Concentration Units: Water: UG/L Soil: UG/KG

3. Laboratory artifact (column bleed) and found in SBLKEZ.

1, 4-14 unknown alkanes

000006

AS, ESAT
1/31/97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX343

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX341

Matrix: (soil/water) SOIL Lab Sample ID: 17669.11

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EE8121.D

Level: (low/med) LOW Date Received: 12/11/96

% Moisture: 30 decanted: (Y/N) N Date Extracted: 12/16/96

Concentrated Extract Volume: 500(uL) Date Analyzed: 12/28/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.6

Number TICs found: ~~8~~ 4

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.526~~	~~16000~~	~~NJAB~~
~~2.~~		~~UNKNOWN~~	~~5.229~~	~~170~~	~~JB~~
~~3.~~	~~110-13-4~~	~~2,5-Hexanedione~~	~~5.376~~	~~110~~	~~J~~
~~4.~~		~~UNKNOWN~~	~~5.495~~	~~150~~	~~JB~~
5.		UNKNOWN	5.577	130	JB
6.	~~620-14-4~~	Benzene, ~~1~~-ethyl-~~3~~-methyl-	5.828	110	NJ
7.	~~5989-54-8~~	~~Cyclohexene, 1-methyl-4-(1-m~~	6.526	290	NJ
8.	6938-94-9	Hexanedioic acid, bis(1-meth	10.064	130	NJ
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

7. unknown
8. Hexanedioic acid, bis(1-methylethyl) ester
1,4 found in SBLKEZ
1-3 elute before 1st SVOA target analyte, phenol.

000429

AS, EDAT
1/21/97

Alkane Report for Sample : YX343 Page: 1

Data file : EE8121.d Matrix : SOIL

	CAS #	Compound	R.T.	Estimated Conc.
1.	~~124-18-5~~	~~Decane~~ Unknown alkane	6.094	110
2.	~~541-02-6~~	~~Cyclopentasiloxane, decamethyl~~	~~7.419~~	~~210~~

RT 1/2/97

Concentration Units: Water: UG/L Soil: UG/KG

2. Laboratory artifact (column bleed) and found in SBLKEZ.

1/7/97

000434

AS, ESAT
1/31/97

1F

EPA SAMPLE NO.

YX344

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX341

Matrix: (soil/water) SOIL Lab Sample ID: 17669.10

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EE8120.D

Level: (low/med) LOW Date Received: 12/11/96

% Moisture: 19 decanted: (Y/N) N Date Extracted: 12/16/96

Concentrated Extract Volume: 500(uL) Date Analyzed: 12/27/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.7

Number TICs found: ~~13~~ 97

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.521~~	~~11000~~	~~NJAB~~
~~2.~~		~~UNKNOWN~~	~~5.228~~	~~120~~	~~JB~~
~~3.~~		~~UNKNOWN~~	~~5.294~~	~~240~~	~~JB~~
~~4.~~	~~110-13-4~~	~~2,5-Hexanedione~~	~~5.381~~	~~82~~	~~J~~
~~5.~~		~~UNKNOWN~~	~~5.501~~	~~120~~	~~JB~~
6.	~~620-14-4~~	~~Benzene, 1-ethyl-3-methyl~~	5.827	110	NJ
7.		UNKNOWN	6.236	91	J
8.	~~138-86-3~~	~~Limonene~~ unknown	6.525	240	NJ
9.		UNKNOWN	7.081	120	J
~~10.~~		~~UNKNOWN~~	~~7.604~~	~~120~~	~~JB~~
11.	6938-94-9	Hexanedioic acid, bis(1-meth	10.065	120	NJ
12.	~~57-10-3~~	~~Hexadecanoic acid~~	13.513	120	NJ
13.		UNKNOWN	13.704	97	J
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

6. Substituted benzene
11. Hexanedioic acid, bis(1-methylethyl) ester
12. unknown organic acid
1,3,5,10 found in SBLKEZ
1-4 elute before 1st SVOA target analyte, phenol.

000452

Alkane Report for Sample : 1X344 Page: 1

Data file : EE8120.d Matrix : SOIL

	CAS #	Compound	R.T.	Estimated Conc.
1.	~~124-18-5~~	~~Decane~~ Unknown alkane	6.094	85
2.	~~541-02-6~~	~~Cyclopentasiloxane, decamethyl~~	7.419	200

Concentration Units: Water: UG/L Soil: UG/KG

2. Laboratory artifact (column bleed) and found in SBLKET.

1-8-97
R

000007

AS, ESAT
1/31/97

1F

EPA SAMPLE NO.

YX345

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX341

Matrix: (soil/water) SOIL Lab Sample ID: 17669.13

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EE8123.D

Level: (low/med) LOW Date Received: 12/11/96

% Moisture: 15 decanted: (Y/N) N Date Extracted: 12/16/96

Concentrated Extract Volume: 500(uL) Date Analyzed: 12/28/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.2

Number TICs found: ~~12~~ 9

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.526~~	~~8800~~	~~A NJ~~
~~2.~~		~~UNKNOWN~~	~~5.228~~	~~130~~	~~JB~~
~~3.~~		~~UNKNOWN~~	~~5.495~~	~~150~~	~~JB~~
4.		UNKNOWN	5.577	120	JB
5.	~~622-96-8~~	Benzene, 1-ethyl-4-methyl-	5.822	100	NJ
6.	~~5989-54-8~~	~~Cyclohexene, 1-methyl-4-(1-m~~	6.526	240	NJ
7.		UNKNOWN	7.076	140	J
8.		UNKNOWN	7.616	200	JB
9.	~~1526-17-6~~	2-Fluoro-6-nitrophenol	7.763	94	J
10.	6938-94-9	Hexanedioic acid, bis(1-meth	10.066	120	NJ
11.		UNKNOWN	11.643	84	J
12.	~~57-10-3~~	~~Hexadecanoic acid~~	13.512	92	NJ
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

6. unknown
10. Hexanedioic acid, bis(1-methylethyl) ester
12. unknown organic acid
1,3 found in SBLKEZ.
1-2 elute before 1st SVOA target analyte phenol.

JP 1-16-97

~~000480~~

000481

Alkane Report for Sample : 1X345 Page: 1

Data file : EE8123.d Matrix : SOIL

FTM 1/18/97

	CAS #	Compound	R.T.	Estimated Conc.
1.	~~121-18-5~~	~~Decane~~	6.094	100
2.	~~541-02-6~~	~~Cyclopentasiloxane, decamethyl~~	~~7.419~~	~~190~~
3.	~~112-95-8~~	~~Eicosane~~	16.77	350
4.	~~629-99-2~~	~~Pentacosane~~	17.22	480
5.	~~629-92-5~~	~~Nonadecane~~	17.70	430
6.	~~55333-99-8~~	~~Eicosane, 7-hexyl~~	18.23	1100

Concentration Units: Water: UG/L Soil: UG/KG

2. Laboratory artifact (column bleed) and found in SBLKEZ

1, 3-6. unknown alkanes

1-8-97
KC

000008

AS, ESAT
1/31/97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX346

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX341

Matrix: (soil/water) SOIL Lab Sample ID: 17669.12

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EE8122.D

Level: (low/med) LOW Date Received: 12/11/96

% Moisture: 20 decanted: (Y/N) N Date Extracted: 12/16/96

Concentrated Extract Volume: 500(uL) Date Analyzed: 12/28/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

Number TICs found: ~~12~~ 7

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.538~~	~~12000~~	~~NJAB~~
~~2.~~		~~UNKNOWN~~	~~5.223~~	~~150~~	~~JB~~
~~3.~~	~~110-13-4~~	~~2,5-Hexanedione~~	~~5.376~~	~~100~~	~~J~~
~~4.~~		~~UNKNOWN~~	~~5.496~~	~~200~~	~~JB~~
5.		UNKNOWN	5.578	140	JB
6.		UNKNOWN	5.697	110	J
7.	~~620-14-4~~	Benzene, ~~1~~-ethyl-~~3~~-methyl-	5.823	120	NJ
8.	~~138-86-3~~	~~Limonene~~ Unknown	6.521	280	NJ
9.		UNKNOWN	7.077	170	J
~~10.~~		~~UNKNOWN~~	~~7.606~~	~~160~~	~~JB~~
11.	~~1526-17-6~~	~~2~~-Fluoro-~~6~~-nitrophenol	7.764	83	NJ
12.	6938-94-9	Hexanedioic acid, bis(1-meth	10.067	120	NJ
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

12. Hexanedioic acid, bis(1-methylethyl) ester
1,4,10 found in SBLKEZ
1-3 elute before 1st SVOA target analyte, phenol.

000513

AS, ESAT 12/1/97

Alkane Report for Sample : 1X346 Page: 1

Data file : EE8122.d Matrix : SOIL

RTh 1/2/97

	CAS #	Compound	R.T.	Estimated Conc.
1.	~~124-18-5~~	~~Decane~~ Unknown alkane	6.090	110
2.	~~541-02-6~~	~~Cyclopentasiloxane, decamethyl~~	~~7.420~~	~~200~~

Concentration Units: Water: UG/L Soil: UG/KG

2. Laboratory artifact (column bleed) and found in ~~SDL~~ KET.

1-7-97
AG

000009

AS, ESAT
1/31/97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX347

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX341

Matrix: (soil/water) SOIL Lab Sample ID: 17669.14

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EE8130.D

Level: (low/med) LOW Date Received: 12/11/96

% Moisture: 20 decanted: (Y/N) N Date Extracted: 12/16/96

Concentrated Extract Volume: 500(uL) Date Analyzed: 12/30/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 9.3

Number TICs found: ~~12~~ 7

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.509~~	~~10000~~	~~NJB~~
~~2.~~		~~Unknown~~	~~5.207~~	~~190~~	~~JB~~
~~3.~~	~~110-13-4~~	~~2,5-Hexanedione~~	~~5.359~~	~~96~~	~~NJ~~
~~4.~~		~~Unknown~~	~~5.479~~	~~250~~	~~JB~~
5.		Unknown	5.561	130	JB
6.		Unknown	5.730	94	J
7.	~~611-14-3~~	~~Benzene, 1-ethyl-2-methyl-~~	5.806	180	NJ
8.	~~138-86-3~~	~~Limonene~~ Unknown	6.505	420	NJ
~~9.~~		~~Unknown~~	~~7.574~~	~~160~~	~~JB~~
10.		Unknown	9.518	99	J
11.	6938-94-9	Hexanedioic acid, bis(1-meth	10.053	140	NJ
12.	~~57-10-3~~	~~Hexadecanoic acid~~	13.498	140	NJ
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

7. substituted benzene
11. Hexanedioic acid, bis(1-methylethyl) ester
12 unknown organic acid
1,4,9 found in SBLKEZ
1-3 elute before 1st SVOA target analyte, phenol.

000539

AS, ESAT 1/21/97

Data file : EE8130.d Matrix : SOIL

	CAS #	Compound	R.T.	Estimated Conc.
1.	~~124-18-5~~	~~Decane~~ Unknown alkane	6.073	200
2.	~~1120-21-4~~	~~Undecane~~ Unknown alkane	7.061	170
3.	~~541-02-6~~	~~Cyclopentasiloxane, decamethyl~~	~~7.405~~	~~240~~

Concentration Units: Water: UG/L Soil: UG/KG

3. Laboratory artifact (column bleed) and found in SBLKEZ.

2/18/97

2

000010

AS, ESAT
1/31/97

1F

EPA SAMPLE NO.

YX348

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX341

Matrix: (soil/water) SOIL Lab Sample ID: 17703.10

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EE8136.D

Level: (low/med) LOW Date Received: 12/13/96

% Moisture: 18 decanted: (Y/N) N Date Extracted: 12/16/96

Concentrated Extract Volume: 500(uL) Date Analyzed: 12/30/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.3

Number TICs found: ~~12~~ 6

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~		~~Unknown~~	~~4.349~~	~~220~~	~~J~~
~~2.~~	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.501~~	~~13000~~	~~NJB~~
~~3.~~		~~UNKNOWN~~	~~5.209~~	~~140~~	~~NJB~~
~~4.~~	~~110-13-4~~	~~2,5-Hexanedione~~	~~5.356~~	~~89~~	~~NJ~~
~~5.~~		~~UNKNOWN~~	~~5.476~~	~~120~~	~~JB~~
6.	~~4436-75-3~~	~~3-Hexene-2,5-dione~~ unknown	5.557	100	NJ
7.		UNKNOWN	5.672	87	J
8.	~~138-86-3~~	~~Limonene~~ unknown	6.505	180	NJ
9.		UNKNOWN	7.061	100	J
~~10.~~		~~UNKNOWN~~	~~7.581~~	~~99~~	~~JB~~
11.	6938-94-9	Hexanedioic acid, bis(1-meth	10.049	96	NJ
12.	~~57-10-3~~	~~Hexadecanoic acid~~	13.496	140	NJ
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

11. Hexanedioic acid, bis(1-methylethyl) ester
12. unknown organic acid
2,5,10 found in SBLKEZ
1-4 elute before 1st SVOA target analyte, phenol.

000564

FORM I SV-TIC

OLM03.0

AS, EAT
1/3/97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX351

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX341

Matrix: (soil/water) SOIL Lab Sample ID: 17669.05

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EE8117.D

Level: (low/med) LOW Date Received: 12/11/96

% Moisture: 16 decanted: (Y/N) N Date Extracted: 12/16/96

Concentrated Extract Volume: 500(uL) Date Analyzed: 12/27/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.4

Number TICs found: ~~24~~ 21

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~107-92-6~~	~~Butanoic acid~~	~~4.345~~	~~5200~~	~~NJ~~
~~2.~~	~~123-42-42~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.558~~	~~27000~~	~~A NJ~~
~~3.~~		~~UNKNOWN~~	~~5.065~~	~~6300~~	~~J~~
4.	~~80-56-8~~	~~.alpha.-Pinene~~ unknown	5.573	6900	NJ
5.		UNKNOWN	5.835	3700	J
6.	~~95-36-3~~	~~1,2,4-~~Trimethylbenzene	6.197	5600	NJ
7.	13466-78-9	3-Carene	6.361	12000	NJ
8.	~~99-87-6~~	~~Benzene, 1-methyl-4-(1-methy~~	6.492	5800	NJ
9.	~~5989-54-8~~	~~Cyclohexene, 1-methyl-4-(1-m~~	6.542	5400	NJ
10.	470-82-6	Eucalyptol	6.619	7200	NJ
11.		UNKNOWN AROMATIC	6.745	3200	J
12.	98-55-5	3-Cyclohexene-1-methanol, .a	8.150	10000	NJ
13.	~~99-94-5~~	Benzoic acid, 4-methyl-	8.854	3300	NJ
14.	~~475-20-7~~	~~1,4-Methanoazulene, decahydr~~	10.181	4800	NJ
15.	~~489-39-4~~	~~1H-Cycloprop[e]azulene, deca~~	10.374	11000	NJ
16.	~~39029-41-9~~	~~Naphthalene, 1,2,3,4,4a,5,6,~~	10.584	4000	J
17.	~~21747-46-6~~	~~1H-Cycloprop[e]azulene, 1a,2~~	10.771	7400	NJ
18.	~~483-76-1~~	~~Naphthalene, 1,2,3,5,6,8a-he~~	10.904	5100	NJ
19.	~~1453-06-1~~	~~Benzenebutanoic acid, 2,5-di~~	11.147	6100	J
20.		UNKNOWN	11.501	3600	J
21.	~~57-10-3~~	~~Hexadecanoic acid~~	13.602	5800	NJ
22.		UNKNOWN	15.279	3900	J
23.		UNKNOWN	15.751	5600	JB
24.		UNKNOWN	16.155	3100	J
25.					
26.					
27.					
28.					
29.					
30.					

1-3 elute before 1st SVOA target analyte, phenol.

8. Benzene, methyl-(methylethyl)-

15, 14, 9. unknown

12. 3-Cyclohexene-1-methanol, .alpha., .alpha. 4-trimethyl-

18, 17, 16. ~~Substituted naphthalene~~ unknown polynuclear aromatic hydrocarbon

19. unknown

21. unknown organic acid

000589

AS, ESAT 1/31/97

Alkane Report for Sample : TX351 Page: 1

Data file : EE8117.d Matrix : SOIL

CAS #	Compound	R.T.	Estimated Conc.
	UNKNOWN ALKANE	5.742	3200
~~124-18-5~~	~~Decane~~	6.109	4700
~~1120-21-4~~	~~Undecane~~	7.095	8400
~~112-40-3~~	~~Dodecane~~	8.017	4600

Concentration Units: Water: UG/L Soil: UG/KG

1-28-97

000013

AS, ESAT
1/31/97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX352

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX341

Matrix: (soil/water) SOIL Lab Sample ID: 17669.04

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EE8116.D

Level: (low/med) LOW Date Received: 12/11/96

% Moisture: 32 decanted: (Y/N) N Date Extracted: 12/16/96

Concentrated Extract Volume: 500(uL) Date Analyzed: 12/27/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

Number TICs found: ~~13~~ 12

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.545~~	~~21000~~	~~NJAB~~
2.		UNKNOWN	5.831	2300	J
3.		UNKNOWN	6.531	2600	J
4.	470-82-6	Eucalyptol	6.597	1600	NJ
5.		UNKNOWN	6.920	2100	J
6.		UNKNOWN	7.353	2000	J
7.	~~98-55-5~~	~~3-Cyclohexene-1-methanol, .a~~	8.126	2700	NJ
8.		UNKNOWN	10.365	1800	J
9.		UNKNOWN	11.082	1100	J
10.	~~57-10-3~~	~~Hexadecanoic acid~~	13.559	10000	NJ
11.	~~13481-95-3~~	~~10-Octadecenoic acid, methyl~~	14.589	7000	NJ
12.	~~57-11-4~~	~~Octadecanoic acid~~	14.678	3500	NJ
13.		UNKNOWN	14.767	4000	JB
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

11, 7. unknown

12, 10. unknown organic acid

1 found in SBLKEZ and elutes before 1st SVOA target analyte, phenol.

000692

AS, ESAT 1/31/97

Alkane Report for Sample : YX352 Page: 1

Data file : EE8116.d Matrix : SOIL

KPH 1/8/97

CAS #	Compound	R.T.	Estimated Conc.
~~124-18-5~~	~~Decane~~	6.098	2200
~~2847-72-5~~	~~Decane, 4 methyl~~	6.334	3700
	UNKNOWN ALKANE	6.733	1800
	UNKNOWN ALKANE	7.084	3900
~~544-76-3~~	UNKNOWN ALKANE	14.29	5000
~~629-97-0~~	~~Docosane~~	14.84	7000
~~638-67-5~~	~~Tricosane~~	15.36	9000
~~646-31-1~~	~~Tetracosane~~	15.85	9600
~~7225-66-3~~	~~Tridecane, 7-hexyl~~	16.33	10000
~~55124-79-3~~	~~Heptadecane, 9-hexyl~~	17.24	9900
~~13475-75-7~~	~~Pentadecane, 8-hexyl~~	17.72	8500
~~630-01-3~~	~~Hexacosane~~	18.25	8200
~~7225-64-1~~	~~Heptadecane, 9-octyl~~	18.85	5900
~~55333-99-8~~	~~Eicosane, 7-hexyl~~	19.54	4800
~~638-68-6~~	~~Triacontane~~	20.34	3100

Unknown alkane ↓

Unknown alkane ↓

Concentration Units: Water: UG/L Soil: UG/KG

1-8-97 RC

000014

AS, ESAT 1/31/97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX355

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX341

Matrix: (soil/water) SOIL Lab Sample ID: 17669.06

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EE8118.D

Level: (low/med) LOW Date Received: 12/11/96

% Moisture: 15 decanted: (Y/N) N Date Extracted: 12/16/96

Concentrated Extract Volume: 500(uL) Date Analyzed: 12/27/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

Number TICs found: ~~11~~ 14

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~		~~UNKNOWN~~	~~4.395~~	~~450~~	~~J~~
~~2.~~	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.553~~	~~11000~~	~~A NJB~~
~~3.~~		~~UNKNOWN~~	~~5.234~~	~~140~~	~~JB~~
~~4.~~		~~UNKNOWN~~	~~5.299~~	~~320~~	~~JB~~
~~5.~~	~~110-13-4~~	~~2,5-Hexanedione~~	~~5.381~~	~~87~~	~~J~~
~~6.~~		~~UNKNOWN~~	~~5.506~~	~~160~~	~~JB~~
7.		UNKNOWN	5.697	87	J
8.	~~611-14-3~~	Benzene, ~~1~~-ethyl-~~2~~-methyl-	5.827	100	NJ
9.	~~5989-54-8~~	~~Cyclohexene, 1-methyl-4-(1-m~~	6.531	240	NJ
~~10.~~		~~UNKNOWN~~	~~7.599~~	~~130~~	~~JB~~
11.	6938-94-9	Hexanedioic acid, bis(1-meth	10.072	120	NJ
12.		Unknown alkane	7.081	150	J
13.		Unknown alkane	11.527	130	J
14.		Unknown alkane	11.877	260	J
15.		Unknown alkane	12.528	200	J
16.		Unknown alkane	12.600	420	J
17.		Unknown alkane	13.522	220	J
18.		Unknown alkane	13.737	240	J
19.		Unknown alkane	14.293	310	J
20.		Unknown alkane	14.839	140	J
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

9. unknown

11. Hexanedioic acid, bis(1-methylethyl) ester

2,4,6,10 found in SBLKEE.

1-5 elute before 1st SVOA target analyte, phenol.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: YX356

Lab Name: ATAS, INC. Contract: 68-D5-0018

Lab Code: ATAS Case No.: 25218 SAS No.: SDG No.: YX341

Matrix: (soil/water) SOIL Lab Sample ID: 17703.09

Sample wt/vol: 30.0 (g/mL) G Lab File ID: EE8135.D

Level: (low/med) LOW Date Received: 12/13/96

% Moisture: 15 decanted: (Y/N) N Date Extracted: 12/16/96

Concentrated Extract Volume: 500(uL) Date Analyzed: 12/30/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9

Number TICs found: ~~11~~ 4

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~123-42-2~~	~~2-Pentanone, 4-hydroxy-4-met~~	~~4.497~~	~~11000~~	~~NJB~~
~~2.~~		~~Unknown~~	~~5.210~~	~~140~~	~~JB~~
~~3.~~		~~Unknown~~	~~5.275~~	~~280~~	~~JB~~
~~4.~~	~~110-13-4~~	~~2,5-Hexanedione~~	~~5.362~~	~~110~~	~~NJ~~
~~5.~~		~~Unknown~~	~~5.476~~	~~160~~	~~JB~~
6.		Unknown	5.564	130	JB
7.	~~138-86-3~~	~~Limonene~~ Unknown	6.506	110	NJ
~~8.~~		~~Unknown~~	~~7.589~~	~~180~~	~~JB~~
9.	~~1526-17-6~~	~~2~~-Fluoro-~~6~~-nitrophenol	7.747	84	NJ
10.	6938-94-9	Hexanedioic acid, bis(1-meth	10.054	120	NJ
~~11.~~		~~Unknown~~	~~14.836~~	~~83~~	~~JB~~
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

10. Hexanedioic acid, bis(1-methylethyl) ester
1,3,5,8,11 found in SBLKEZ.
1-4 elute before 1st SVOA target analyte, phenol.

000834

AS, EAT
1/31/97

LOCKHEED MARTIN

TPO: [ ]FYI [X]Attention [X]Action Region 9

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25218 Memo #02 LABORATORY ATAS

SDG NO. YX341 SITE NAME Victoria Golf Course

SOW OLM03.2 REVIEW COMPLETION DATE February 10, 1997

REVIEWER [ ] ESD [X] ESAT REVIEWER'S NAME Adriane Scheele

NO. OF SAMPLES _____ WATER 14 SOIL _____ OTHER

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES/PRESERVATION	O	O		
2. GC-MS TUNE/GC PERFORMANCE	O	O		
3. INITIAL CALIBRATIONS	O	O		
4. CONTINUING CALIBRATIONS	X	X		
5. FIELD QC	X	X		
6. LABORATORY BLANKS	X	X		
7. SURROGATES	O	O		
8. MATRIX SPIKE/DUPLICATES	O	O		
9. REGIONAL QC	N/A	N/A		
10. INTERNAL STANDARDS	O	Z		
11. COMPOUND IDENTIFICATION	O	O		
12. COMPOUND QUANTITATION	O	O		
13. SYSTEM PERFORMANCE	O	O		
14. OVERALL ASSESSMENT	X	Z		

O = Data have no problems or problems that do not affect data quality.
X = Data are qualified due to minor problems.
M = Data are qualified due to major problems.
Z = Data are unacceptable.
N/A = Not Applicable

TPO ACTION: Quantitation limits for several semivolatile analytes in two samples are rejected (R) due to low internal standard area counts.

TPO ATTENTION: (1) Several results are qualified as nondetected and estimated (U,J) due to contamination in method and storage blanks. (2) Several results are estimated (J) due to calibration problems. (3) Several semivolatile results in two samples are estimated (J) due to low internal standard area counts.

AREAS OF CONCERN: None.

LOCKHEED MARTIN

In Reference to Case No(s).:
25218 Memo #02

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log #1

Date of Call: January 30, 1997

Laboratory Name: American Technical & Analytical Services (ATAS)

Lab Contact: Ruseal Brewer

Region: 9

Regional Contact: Adriane Scheele, ESAT/Lockheed

Call Initiated By: _____ Laboratory __X__ Region

In reference to data for the following:
Sample Delivery Group (SDG) YX341 for Volatiles Analysis

Summary of Questions/Issues Discussed:

The following items were noted during the review of the data for the volatiles fraction.

1. Form 5A, page 32, incorrectly states that a heated purge was used. Please submit a corrected Form 5A.

2. The quantitation report, page 77, for sample YX343 states that acetone elutes at 7.316 minutes. Form 1E, page 75, for sample YX343 states that an unknown elutes at 7.316 minutes. The extracted ion current profiles (EICP) provided for acetone and the unknown appear to be identical. Please clarify or submit a corrected Form 1E.

3. Form 1E, page 155, for sample YX352 lists naphthalene as a tentatively identified compound (TIC) eluting at 21.129 minutes. According to Section 11.1.2.2 of Exhibit D-38/VOA of the SOW, semivolatile target analytes listed in Exhibit C are not to be reported as TICs. Please submit a corrected Form 1E.

Summary of Resolution:

1-3. Corrected Forms 1E and 5A were received at ESAT on February 5, 1997.

Adriane Scheele
Signature

February 10, 1997
Date

Distribution: (1) Lab Copy, (2) Region Copy, (3) CLASS Copy

LOCKHEED MARTIN

In Reference to Case No(s).:
25218 Memo #02

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log #2

Date of Call: February 4, 1997

Laboratory Name: American Technical & Analytical Services (ATAS)

Lab Contact: Ruseal Brewer

Region: 9

Regional Contact: Adriane Scheele, ESAT/Lockheed

Call Initiated By: _____ Laboratory __X__ Region

In reference to data for the following:
Sample Delivery Group (SDG) YX341 for Semivolatiles Analysis

Summary of Questions/Issues Discussed:

The following items were noted during the review of the data for the semivolatiles fraction.

1. Form 5B, page 317, indicates that decafluorotriphenylphosphine (DFTPP) was injected on December 27, 1996 at 14:00. However, the raw data provided on pages 925 through 928 indicate that DFTPP was injected on December 27, 1996 at 10:29. Also, the percent relative abundances determined using the raw data do not correspond to those listed on Form 5B. Please submit appropriate documentation.
2. A tentatively identified compound (TIC) eluting at 7.383 min. in sample YX340 is not listed on the Form 1F. An alkane report for sample YX340 was not provided either. Please provide appropriate documentation.
3. TICs eluting at 7.081, 7.425, 11.527, 11.877, 12.528, 12.600, 13.522, 13.737, 14.293, and 14.839 min. in sample YX355 are not listed on the Form 1F. An alkane report for sample YX355 was not provided either. Please provide appropriate documentation.

Summary of Resolution:

1. Raw data corresponding to the December 27, 1996, 14:00 DFTPP injection were received at ESAT on February 5, 1997.
2-3. Alkane reports for samples YX340 and YX355 were received at ESAT on February 6, 1997.

Adriane Scheele
Signature

February 10, 1997
Date

Distribution: (1) Lab Copy, (2) Region Copy, (3) CLASS Copy

LOCKHEED MARTIN

Contract Laboratory Program
REGION 9/LABORATORY COMMUNICATION SYSTEM
CSF COMPLETENESS EVIDENCE AUDIT PROGRAM
Telephone Communication Summary Form

AUDIT NO.: 2/97/9
CASE NO.: 25218 Memo #02
SDG NO.: YW341
FILENAME: 25218M02.TCS

LAB CONTACT: Ruseal Brewer
LAB CODE: ATAS
LAB NAME: American Analytical & Technical Services
LAB LOCATION: Maryland Heights, MO

Summary of Questions/Issues Discussed:

The following items were noted during the audit of the complete sample delivery group file (CSF).

1. Remark 6 of Form DC-1, page 1049, includes airbill 279 440 5585. Since the samples shipped to the laboratory under airbill 279 440 5585 are not included in the samples listed on the Form DC-1, the airbill number should not have been included in remark 6. Please submit a corrected Form DC-1, page 1049.

2. Please refer to Form DC-1, page 1050. Please submit a Form DC-1, page 1050, corrected for the following observations.

   A. Remark 11 lists the time of receipt as 0845. The chain of custody forms associated with the samples listed on Form DC-1 include two times of receipts: 0845 and 1400.
   B. In the remarks section regarding the condition of sample shipment, a 10°C temperature is recorded for all of the samples listed. However, a 5°C temperature is recorded on the chain of custody forms for samples YX325, YX333, YX339, YX340, YX348, YX356, and YX363.

3. The sample transfer section of Form DC-1, page 1050, was not completed. Please complete the sample transfer section as instructed per Section 3.19 of Exhibit B-61 of the Statement of Work (SOW) in future data package submittals.

4. Page numbers **933** through 976 are incorrectly listed for the matrix spike/matrix spike duplicate data in Section 5.d of Form DC-2-2. The auditor has manually corrected those page numbers as **957** through 976. Please note in your records.

5. Samples for this sample delivery group (SDG) were provided in three shipments (airbill numbers 279 440 5574, 279 440 5784, and 279 440 6646) as indicated on the chain of custody forms on pages 17 through 19. The auditor has manually revised Section 8, Airbills, on Form DC-2-4 to reflect three shipments. Please note in your records.

Summary of Resolution:

1-2. The laboratory's response is pending as of February 10, 1997.

3-5. No further response from the laboratory is required.

Adrian Schuck
Auditor, ESAT/Lockheed

January 30, 1997
Date of Contact

Distribution: (1) Lab Copy, (2) Region Copy, (3) CLASS Copy

Case No.: 25218 Memo #04
Site: Victoria Golf Course
Lab.: Analytical Resources, Inc. (ARI)
Reviewer: Dina David-Bailey, ESAT/Lockheed
Date: February 14, 1997

TABLE 1A

Analysis Type: Low Concentration Groundwater Samples for Total Metals

Concentration in µg/L

Station Location	GW-1-1			GW-3-1			GW-5-1			GW-13-1			GW-14-1			GW-28-1			Lab Blank		
Sample I.D.	MYX291			MYX293 BG			MYX295 D1			MYX301 EB			MYX302 EB			MYX334 D1					
Date of Collection	12/13/96			12/11/96			12/11/96			12/10/96			12/11/96			12/11/96					
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	115 L	J	AB	20.0 U			20.0 U			20.0 U			20.0 U			27.7 L	J	A	20.0 U		
Antimony	50.0 U	J	B	50.0 U			50.0 U			50.0 U			50.0 U			50.0 U			50.0 U		
Arsenic	1.0 U	J	B	1.0 L	J	A	1.7 L	J	A	1.0 U			1.0 U			1.7 L	J	A	1.0 U		
Barium	92.6 L	J	AB	42.1 L	J	A	325			1.0 U			1.0 U			339			2.6 L	J	A
Beryllium	1.0 U	J	B	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Cadmium	2.0 U	J	B	2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U		
Calcium	314000	J	B	173000			99700			119 L	J	A	32.6 L	J	A	106000			20.0 U		
Chromium	5.0 U	J	B	5.0 U			5.0 U			5.0 U			5.0 U			5.0 U			5.0 U		
Cobalt	3.0 U	J	B	3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U		
Copper	2.0 U	J	B	5.8 L	J	A	2.0 U			3.7 L	J	A	2.0 L	J	A	2.0 U			2.0 U		
Iron	5960	J	B	20.0 U			20.0 U			20.0 U			20.0 U			20.0 U			20.0 U		
Lead	1.0 U	J	B	1.0 U	J	D	1.0 U			1.0 U	J	D	1.0 U	J	D	1.0 U			1.0 U		
Magnesium	82400	J	B	45000			38000			20.0 U			20.0 U			40900			20.0 U		
Manganese	1400	J	B	411			419			1.7 L	J	A	1.3 L	J	A	451			1.1 L	J	A
Mercury	0.10 U	J	B	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Nickel	20.7 L	J	AB	10.0 U			10.0 U			10.0 U			10.0 U			10.0 U			10.0 U		
Potassium	15000	J	B	8570			7730			400 U			400 U			7580			400 U		
Selenium	1.0 U	J	BC	1.0 U	J	CD	1.0 U	J	C	1.0 U			1.0 U			1.0 U	J	C	1.0 U		
Silver	3.0 U	J	B	3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U		
Sodium	371000	J	B	418000			78100			324 L	J	A	253 L	J	A	83400			99.1 L	J	A
Thallium	1.0 U	J	B	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Vanadium	9.6 L	J	AB	5.7 L	J	A	6.0 L	J	A	3.0 L	J	A	3.8 L	J	A	4.6 L	J	A	3.7 L	J	A
Zinc	44.6	J	B	18.3 L	J	A	4.9 L	J	A	6.1 L	J	A	4.3 L	J	A	9.8 L	J	A	4.3 L	J	A

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL-Instrument Detection Limit.
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
CRDL-Contract Required Detection Limit

ANALYTICAL RESULTS
TABLE 1A

No.: 25218 Memo #03
Victoria Golf Course
Analytical Resources, Inc. (ARI)
swer: Dina David-Bailey, ESAT/Lockheed
: February 14, 1997

Analysis Type: Low Concentration Soil Samples for Total Metals

Concentration in mg/Kg

on Location	SS-4-20			SS-5-10			SS-5-20			SS-7-10			SS-7-20			SS-9-10			SS-10-10		
ple I.D.	MYX315 BG			MYX316			MYX317			MYX320			MYX321			MYX324 D2			MYX325 D1		
e of Collection	12/10/96			12/10/96			12/10/96			12/10/96			12/9/96			12/10/96			12/10/96		
ameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
minum	12100			26800			19700			10800			16400			24400			31400		
timony	12.3 U	R	A	16.6	J	B	12.1 U	R	A	13.8 U	R	A	14.0 U	R	A	11.0 U	R	A	11.6 U	R	A
senic	4.0			9.2			15.6			6.5			7.3			13.3		H	5.5		
rium	112	J	D	242	J	D	167	J	D	821	J	D	341	J	D	250	J	D	200	J	D
eryllium	0.32 L	J	C	0.73 L	J	C	0.61 L	J	C	0.65 L	J	C	0.36 L	J	C	0.64 L	J	C	0.89 L	J	C
admium	0.49 U			0.99 L	J	C	0.76 L	J	C	6.2			2.0			1.5			0.46 U		
alcium	5590			24600			97400			10600			23700			19500		H	9880		
hromium	16.3			33.0			30.9			912			48.0			33.3			39.1		
obalt	8.3 L	J	C	12.5			11.2 L	J	C	17.2			13.1 L	J	C	12.6			15.4		
Copper	16.9	J	F	36.6	J	F	30.3	J	F	376	J	F	176	J	F	345	J	FH	38.1	J	F
Iron	19200			34000			26000			35800			27200			28700			38200		
Lead	5.1			9.5			9.8			942			245			233		H	10.6		
Magnesium	6760			12500			15200			4720			6440			9280			11400		
Manganese	478			581			980			371			368			584			613		
Mercury	0.05 U		I	0.06 U		I	0.06 U		I	0.72			0.31		I	0.14		I	0.05 U		I
Nickel	13.9			21.8			26.9			86.8			38.8			29.0			23.8		
Potassium	2780			6710			2350			3980			4160			5200			5060		
Selenium	0.23 U	J	BE	1.1 U	J	BEG	1.2 U	J	BEG	0.28 U	J	BE	0.28 U	J	BE	1.1 U	J	BG	1.1 U	J	BG
Silver	0.74 U			0.71 U			0.72 U			1.8 L	J	C	0.86 L	J	C	0.66 U			0.70 U		
Sodium	356 L	J	C	3010			3180			1370 L	J	C	1470			763 L	J	C	2730		
Thallium	0.23 U	J	E	1.1 U		G	1.2 U		G	1.4 U		G	1.4 U		G	1.1 U		G	1.1 U		G
Vanadium	38.0			73.5			56.3			179			50.0			59.0			78.8		
Zinc	45.8	J	B	85.3	J	B	61.2	J	B	1140	J	B	832	J	B	802	J	BH	97.7	J	B
Percent Solids	81.5 %			83.1 %			80.5 %			71.5 %			70.0 %			87.9 %			84.4 %		

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.
MDL-Method Detection Limit.
licable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
CRDL-Contract Required Detection Limit

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #03
Site: Victoria Golf Course
Lab.: Analytical Resources, Inc. (ARI)
Reviewer: Dina David-Bailey, ESAT/Lockheed
Date: February 14, 1997

Analysis Type: Low Concentration Soil Samples for Total Metals

Concentration in mg/Kg

Station Location	SS-1-10			SS-1-20			SS-2-10			SS-2-20			SS-3-10			SS-3-20			SS-4-10		
Sample I.D.	MYX308 D1			MYX309			MYX310 D2			MYX311			MYX312 BG			MYX313 BG			MYX314 BG		
Date of Collection	12/10/96			12/10/96			12/10/96			12/10/96			12/10/96			12/10/96			12/10/96		
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	28300			25400			25700			14100			32500			15700			22800		
Antimony	13.6 L	J	BC	11.8 U	R	A	11.2 U	R	A	12.5 U	R	A	12.3 U	R	A	11.4 U	R	A	11.1 U	R	A
Arsenic	5.0			5.5			3.2 L	J	CGH	4.5			5.9			5.9			4.4 L	J	CG
Barium	158	J	D	202	J	D	212	J	D	233	J	D	184	J	D	115	J	D	127	J	D
Beryllium	0.83 L	J	C	0.66 L	J	C	0.70 L	J	C	0.40 L	J	C	0.87 L	J	C	0.47 L	J	C	0.57 L	J	C
Cadmium	0.47 U			0.63 L	J	C	0.48 L	J	C	1.0 L	J	C	0.51 L	J	C	0.46 U			0.50 L	J	C
Calcium	7660			12400			9160		H	9090			12200			4090			14500		
Chromium	33.7			34.8			30.7			29.5			40.5			37.7			27.3		
Cobalt	15.9			14.4			12.6			7.9 L	J	C	16.5			8.9 L	J	C	11.4		
Copper	36.8	J	F	34.2	J	F	31.1	J	FH	33.1	J	F	35.5	J	F	22.4	J	F	26.7	J	F
Iron	36800			32500			31100			20400			39000			23300			28100		
Lead	10.7			11.2			10.8		H	41.8			11.3			6.0			7.7		
Magnesium	11100			10800			9820			5770			13600			6540			10000		
Manganese	617			613			486			221			496			272			438		
Mercury	0.06 U		I	0.06 L	J	CI	0.06 U		I	0.20		I	0.06 U		I	0.15		I	0.06 U		I
Nickel	28.2			24.2			20.7			13.3			29.5			17.4			18.1		
Potassium	4820			3980			5260			4170			5190			2840			5230		
Selenium	1.2 U	J	BEG	1.2 U	J	BEG	1.1 U	J	BEG	0.25 U	J	BE	1.2 U	J	BEG	0.25 U	J	BE	1.1 U	J	BEG
Silver	0.70 U			0.71 U			0.67 U			0.75 U			0.74 U			0.68 U			0.67 U		
Sodium	2690			1990			2250			1130 L	J	C	4120			847 L	J	C	875 L	J	C
Thallium	1.2 U		G	1.2 U		G	1.1 U		G	1.3 U		G	1.2 U		G	0.25 U	J	E	1.1 U		G
Vanadium	73.8			62.7			60.5			41.7			75.8			49.8			59.3		
Zinc	88.2	J	B	82.6	J	B	76.6	J	BH	179	J	B	85.2	J	B	50.9	J	B	71.9	J	B
Percent Solids	84.1 %			84.1 %			85.7 %			79.0 %			81.5 %			80.6 %			85.9 %		

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL-Instrument Detection Limit. MDL-Method Detection Limit.
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
CRDL-Contract Required Detection Limit

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #03
Site: Victoria Golf Course
Lab.: Analytical Resources, Inc. (ARI)
Reviewer: Dina David-Bailey, ESAT/Lockheed
Date: February 14, 1997

Analysis Type: Low Concentration Groundwater Samples for Total Metals

Concentration in µg/L

Station Location	GW-2-1			GW-4-1			GW-9-1			GW-10-1			GW-11-1			GW-12-1			Lab Blank 1		
Sample I.D.	MYX292			MYX294 BG			MYX297			MYX298			MYX299 EB			MYX300 EB					
Date of Collection	12/9/96			12/12/96			12/10/96			12/11/96			12/9/96			12/10/96					
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	20.0 U			82.0 L	J	C	20.0 U			20.0 U			34.9 L	J	C	20.0 U			20.0 U		
Antimony	50.0 U			50.0 U			50.0 U			50.0 U			50.0 U			50.0 U			50.0 U		
Arsenic	6.6 L	J	C	10.4			6.8 L	J	C	1.2 L	J	C	1.0 U			1.0 U			1.0 U		
Barium	95.7 L	J	C	103 L	J	C	60.2 L	J	C	34.7 L	J	C	1.0 U			1.0 U			1.0 U		
Beryllium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Cadmium	2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U		
Calcium	1020000			46300			467000			1100000			211 L	J	C	26.8 L	J	C	20.0 U		
Chromium	5.0 U			5.0 U			5.0 U			5.0 U			5.0 U			5.0 U			5.0 U		
Cobalt	3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U		
Copper	2.0 U			2.0 U			2.0 U			2.0 U			7.0 L	J	C	2.0 U			2.0 U		
Iron	1820			56.5 L	J	C	20.0 U			18200			22.7 L	J	C	20.0 U			20.0 U		
Lead	1.0 U			1.0 U			1.0 U			5.0 U		G	1.0 U			1.0 U			1.0 U		
Magnesium	260000			15900			119000			327000			67.0 L	J	C	20.0 U			20.0 U		
Manganese	2690			154			676			1970			1.0 U			1.0 U			1.0 U		
Mercury	0.10 U	J	B	0.10 U	J	B	0.10 U	J	B	0.10 U	J	B	0.10 U			0.10 U			0.10 U		
Nickel	10.0 U			10.0 U			10.0 U			10.0 U			10.0 U			10.0 U			10.0 U		
Potassium	18300			6050			10200			21000			400 U			400 U			400 U		
Selenium	5.0 U	R	AG	1.0 U	R	AE	1.0 U	R	AE	5.0 U	R	AG	1.0 U			1.0 U			1.0 U		
Silver	3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U		
Sodium	580000			54800			227000			1380000			432 L	J	C	50.0 U			50.0 U		
Thallium	1.0 U			1.0 U			1.0 U			1.0 U	J	E	1.0 U			1.0 U			1.0 U		
Vanadium	2.0 U			2.0 U			7.0 L	J	C	2.0 U			2.3 L	J	C	2.3 L	J	C	2.0 U		
Zinc	98.5			4.0 U			53.1			64.6			4.0 U			4.0 U			4.0 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL-Instrument Detection Limit.
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
CRDL-Contract Required Detection Limit

Station Location	GW-1-1			GW-2			GW-3-1			GW-4-1			GW-5-1			GW-9			GW-10-1		
Sample I.D.	YX322			YX323			YX324 BG			YX325 BG			YX326 D1			YX328			YX329		
Date of Collection	12/13/96			12/9/96			12/11/96			12/12/96			12/11/96			12/10/96			12/11/96		
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Acenaphthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrophenol	25 U			25 U	J	C	25 U			25 U			25 U			25 U	J	C	25 U		
4-Nitrophenol	25 U			25 U		F	25 U			25 U			25 U			25 U			25 U		
Dibenzofuran	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Diethylphthalate	3 L	J	AG	10 U			0.6 L	J	AG	10 U			10 U			10 U			10 U		
4-Chlorophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Fluorene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Nitroaniline	25 U			25 U	J	C	25 U			25 U			25 U			25 U	J	C	25 U		
4,6-Dinitro-2-methylphenol	25 U	J	E	25 U			25 U			25 U			25 U	J	E	25 U			25 U		
N-Nitrosodiphenylamine	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U		
4-Bromophenyl phenyl ether	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U		
Hexachlorobenzene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U		
Pentachlorophenol	25 U	J	E	25 U		F	25 U			25 U			25 U	J	E	25 U			25 U		
Phenanthrene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U		
Anthracene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U		
Carbazole	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U		
Di-n-butylphthalate	7 L	J	AEG	10 U	J	B	57		G	21		G	2 L	J	AEG	1 L	J	AG	10 U		
Fluoranthene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U		
Pyrene	10 U	J	DE	10 U			10 U			10 U	J	D	10 U	J	E	10 U			10 U	J	D
Butylbenzylphthalate	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U		
3,3'-Dichlorobenzidine	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U		
Benzo(a)anthracene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U		
Chrysene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U		
bis(2-Ethylhexyl)phthalate	10 U	J	E	10 U			2 L	J	AG	1 L	J	AG	4 L	J	AEG	16		G	6 L	J	AG
Di-n-octylphthalate	10 U	J	DE	10 U			10 U			10 U	J	D	10 U	J	E	10 U			10 U	J	DE
Benzo(b)fluoranthene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U	J	E
Benzo(k)fluoranthene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U	J	E
Benzo(a)pyrene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U	J	E
Indeno(1,2,3-cd)pyrene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U	J	E
Dibenz(a,h)anthracene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U	J	E
Benzo(g,h,i)perylene	10 U	J	E	10 U			10 U			10 U			10 U	J	E	10 U			10 U	J	E

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

ANALYTICAL RESULTS

TABLE 1A

Case No.: 25218 Memo #01

Site: Victoria Golf Course

Lab.: American Technical & Analytical Services (ATAS)

Reviewer: Dina David-Bailey, ESAT/Lockheed

Date: February 10, 1997

Analysis Type: Low Level Groundwater Samples for Semivolatiles

Concentration in µg/L

Station Location	GW-1-1			GW-2			GW-3-1			GW-4-1			GW-5-1			GW-9			GW-10-1		
Sample I.D.	YX322			YX323			YX324 BG			YX325 BG			YX326 D1			YX328			YX329		
Date of Collection	12/13/96			12/9/96			12/11/96			12/12/96			12/11/96			12/10/96			12/11/96		
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Phenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethyl)ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Chlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,3-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,4-Dichlorobenzene	5 L	J	A	10 U			10 U			10 U			10 U			10 U			10 U		
1,2-Dichlorobenzene	2 L	J	A	10 U			10 U			10 U			10 U			10 U			10 U		
2-Methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,2'-oxybis(1-Chloropropane)	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
N-Nitroso-di-n-propylamine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachloroethane	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Nitrobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Isophorone	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Nitrophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dimethylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethoxy)methane	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dichlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,2,4-Trichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Naphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chloroaniline	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorobutadiene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chloro-3-methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Methylnaphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorocyclopentadiene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4,6-Trichlorophenol	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
2,4,5-Trichlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Chloronaphthalene	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
2-Nitroaniline	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Dimethylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Acenaphthylene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,6-Dinitrotoluene	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
3-Nitroaniline																					

Station Location	GW-11			GW-12-1			GW-13-1			GW-14-1			GW-28-1			Method Blank			Method Blank		
Sample I.D.	YX330 EB			YX331 FB			YX332 EB			YX333 EB			YX363 D1			SBLKEA			SBLKEU		
Date of Collection	12/9/96			12/10/96			12/10/96			12/11/96			12/11/96								
Semivolatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Acenaphthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrophenol	25 U	J	C	25 U			25 U			25 U			25 U			25 U			25 U		
4-Nitrophenol	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
Dibenzofuran	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Diethylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chlorophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Fluorene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Nitroaniline	25 U	J	C	25 U			25 U			25 U			25 U			25 U			25 U		
4,6-Dinitro-2-methylphenol	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
N-Nitrosodiphenylamine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Bromophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Pentachlorophenol	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
Phenanthrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Carbazole	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Di-n-butylphthalate	0.5 L	J	AB	10 U			10 U			10 U			2 L	J	AG	10 U			10 U		
Fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Pyrene	10 U			10 U			10 U			10 U	J	D	10 U	J	D	10 U			10 U		
Butylbenzylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
3,3'-Dichlorobenzidine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(a)anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Chrysene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Ethylhexyl)phthalate	1 L	J	AB	10 U			10 U			10 U			3 L	J	AG	10 U			10 U		
Di-n-octylphthalate	10 U			10 U			10 U			10 U	J	D	10 U	J	D	10 U			0.5 L	J	AB
Benzo(b)fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(k)fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(a)pyrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Indeno(1,2,3-cd)pyrene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Dibenz(a,h)anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Benzo(g,h,i)perylene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #01
Site: Victoria Golf Course
Lab.: American Technical & Analytical Services (ATAS)
Reviewer: Dina David-Bailey, ESAT/Lockheed
Date: February 10, 1997

Analysis Type: Low Level Groundwater Samples for Semivolatiles

Concentration in µg/L

Station Location	GW-11			GW-12-1			GW-13-1			GW-14-1			GW-28-1			Method Blank			Method Blank		
Sample I.D.	YX330 EB			YX331 FB			YX332 EB			YX333 EB			YX363 D1			SBLKEA			SBLKEU		
Date of Collection	12/9/96			12/10/96			12/10/96			12/11/96			12/11/96								
Semivolatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Phenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethyl)ether	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Chlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,3-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,4-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,2-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,2'-oxybis(1-Chloropropane)	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
N-Nitroso-di-n-propylamine	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachloroethane	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Nitrobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Isophorone	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Nitrophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dimethylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
bis(2-Chloroethoxy)methane	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4-Dichlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
1,2,4-Trichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Naphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chloroaniline	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorobutadiene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
4-Chloro-3-methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Methylnaphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Hexachlorocyclopentadiene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4,6-Trichlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,4,5-Trichlorophenol	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
2-Chloronaphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2-Nitroaniline	25 U			25 U			25 U			25 U			25 U			25 U			25 U		
Dimethylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
Acenaphthylene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
2,6-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10 U			10 U		
3-Nitroaniline	25 U			25 U			25 U			25 U			25 U			25 U			25 U		

Station Location	GW-8-1			GW-15-1			GW-16-1			GW-17-1			Method Blank			Method Blank			CRQL		
Sample I.D.	YX327 D1			YX334 EB			YX335 EB			YX336 D1			SBLK1			SBLK3					
Date of Collection	1/8/97			1/8/97			1/8/97			1/8/97											
Semivolatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Acenaphthene	10 U		G	10 U			10 U			10 U			10 U			10 U			10		
2,4-Dinitrophenol	25 U			25 U			25 U			25 U			25 U			25 U	J	E	25		
4-Nitrophenol	25 U			25 U			25 U			25 U			25 U			25 U	J	E	25		
Dibenzofuran	10 U			10 U			10 U			10 U			10 U			10 U			10		
2,4-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10 U	J	E	10		
Diethylphthalate	1 L	J	AH	10 U			10 U			1 L	J	AH	10 U			0.6 L	J	AC	10		
4-Chlorophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U			10 U			10		
Fluorene	10 U			10 U			10 U			10 U			10 U			10 U			10		
4-Nitroaniline	25 U			25 U			25 U			25 U			25 U			25 U	J	E	25		
4,6-Dinitro-2-methylphenol	25 U			25 U			25 U			25 U			25 U			25 U			25		
N-Nitrosodiphenylamine	10 U			10 U			10 U			10 U			10 U			10 U			10		
4-Bromophenyl phenyl ether	10 U			10 U			10 U			10 U			10 U			10 U			10		
Hexachlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10		
Pentachlorophenol	25 U			25 U			25 U			25 U			25 U			25 U			25		
Phenanthrene	10 U			10 U			10 U			10 U			10 U			10 U			10		
Anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10		
Carbazole	10 U			10 U			10 U			10 U			10 U			10 U			10		
Di-n-butylphthalate	10 U	J	C	10 U			0.6 L	J	AC	10 U	J	C	10 U			1 L	J	AC	10		
Fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U			10		
Pyrene	10 U			10 U			10 U			10 U			10 U			10 U			10		
Butylbenzylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10		
3,3'-Dichlorobenzidine	10 U			10 U			10 U			10 U			10 U			10 U			10		
Benzo(a)anthracene	10 U			10 U			10 U			10 U			10 U			10 U			10		
Chrysene	10 U			10 U			10 U			10 U			10 U			10 U			10		
bis(2-Ethylhexyl)phthalate	10 U	J	C	10 U			1 L	J	AC	10 U	J	C	10 U			1 L	J	AC	10		
Di-n-octylphthalate	10 U			10 U			10 U			10 U			10 U			10 U	J	F	10		
Benzo(b)fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U	J	F	10		
Benzo(k)fluoranthene	10 U			10 U			10 U			10 U			10 U			10 U	J	F	10		
Benzo(a)pyrene	10 U			10 U			10 U			10 U			10 U			10 U	J	F	10		
Indeno(1,2,3-cd)pyrene	10 U			10 U			10 U			10 U			10 U			10 U	J	F	10		
Dibenz(a,h)anthracene	10 U			10 U			10 U			10 U			10 U			10 U	J	F	10		
Benzo(g,h,i)perylene	10 U			10 U			10 U			10 U			10 U			10 U	J	F	10		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

ANALYTICAL RESULTS

TABLE 1A

Case No.: 25268 Memo #01
Site: Victoria Golf Course
Lab.: Southwest Labs of Oklahoma, Inc. (SWOK)
Reviewer: Adriane Scheele, ESAT/Lockheed
Date: February 21, 1997

Analysis Type: Low Level Groundwater Samples for Semivolatiles

Concentration in µg/L

Station Location	GW-8-1			GW-15-1			GW-16-1			GW-17-1			Method Blank			Method Blank			CRQL		
Sample I.D.	YX327 D1			YX334 EB			YX335 EB			YX336 D1			SBLK1			SBLK3					
Date of Collection	1/8/97			1/8/97			1/8/97			1/8/97											
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Phenol	10 U			10 U			10 U			10 U			10 U			10 U			10		
bis(2-Chloroethyl)ether	10 U			10 U			10 U			10 U			10 U			10 U			10		
2-Chlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10		
1,3-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10		
1,4-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10		
1,2-Dichlorobenzene	10 U			10 U			10 U			10 U			10 U			10 U			10		
2-Methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10		
2,2'-oxybis(1-Chloropropane)	10 U			10 U			10 U			10 U			10 U			10 U			10		
4-Methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10		
N-Nitroso-di-n-propylamine	10 U		G	10 U			10 U			10 U			10 U			10 U			10		
Hexachloroethane	10 U			10 U			10 U			10 U			10 U			10 U			10		
Nitrobenzene	10 U			10 U			10 U			0.5 L	J	A	10 U			10 U			10		
Isophorone	10 U			10 U			10 U			10 U			10 U			10 U			10		
2-Nitrophenol	10 U			10 U			10 U			10 U			10 U			10 U			10		
2,4-Dimethylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10		
bis(2-Chloroethoxy)methane	10 U			10 U			10 U			10 U			10 U			10 U			10		
2,4-Dichlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10		
1,2,4-Trichlorobenzene	10 U		G	10 U			10 U			10 U			10 U			10 U			10		
Naphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10		
4-Chloroaniline	10 U			10 U			10 U			10 U			10 U			10 U			10		
Hexachlorobutadiene	10 U			10 U			10 U			0.6 L	J	A	10 U			10 U			10		
4-Chloro-3-methylphenol	10 U			10 U			10 U			10 U			10 U			10 U			10		
2-Methylnaphthalene	10 U			10 U			10 U			10 U			10 U			10 U			10		
Hexachlorocyclopentadiene	10 U			10 U			10 U			10 U			10 U			10 U			10		
2,4,6-Trichlorophenol	25 U			25 U			25 U			25 U			25 U			25 U			25		
2,4,5-Trichlorophenol	10 U			10 U			10 U			10 U			10 U			10 U			10		
2-Chloronaphthalene	25 U			25 U			25 U			25 U			25 U			25 U			25		
2-Nitroaniline	10 U			10 U			10 U			10 U			10 U			10 U			10		
Dimethylphthalate	10 U			10 U			10 U			10 U			10 U			10 U			10		
Acenaphthylene	10 U			10 U			10 U			10 U			10 U			10 U			10		
2,6-Dinitrotoluene	10 U			10 U			10 U			10 U			10 U			10 U			10		
3-Nitroaniline	25 U			25 U			25 U			25 U			25 U			25 U			25		

Station Location	SS-4-20			SS-5-10			SS-5-20			SS-7-10			SS-7-20			SS-9-10			SS-10-10		
Sample I.D.	YX346 BG			YX347			YX348			YX351			YX352			YX355 D2			YX356 D1		
Date of Collection	12/10/96			12/10/96			12/10/96			12/9/96			12/9/96			12/9/96			12/10/96		
Semivolatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Acenaphthene	410 U			410 U			400 U			58 L	J	BG	54 L	J	B	390 U			390 U		
2,4-Dinitrophenol	1000 U			1000 U			1000 U			990 U	J	G	1200 U			980 U			980 U		
4-Nitrophenol	1000 U			1000 U			1000 U			990 U	J	G	1200 U			980 U			980 U		
Dibenzofuran	410 U			410 U			400 U			390 U	J	G	40 L	J	B	390 U			390 U		
2,4-Dinitrotoluene	410 U			410 U			400 U			390 U	J	G	480 U			390 U			390 U		
Diethylphthalate	25 L	J	BJ	36 L	J	BJ	24 L	J	BJ	78 L	J	BGJ	480 U			23 L	J	BJ	29 L	J	BJ
4-Chlorophenyl phenyl ether	410 U			410 U			400 U			390 U	J	G	480 U			390 U			390 U		
Fluorene	410 U			410 U			400 U			140 L	J	BG	98 L	J	B	390 U			390 U		
4-Nitroaniline	1000 U			1000 U			1000 U			990 U	J	G	1200 U			980 U			980 U		
4,6-Dinitro-2-methylphenol	1000 U			1000 U			1000 U			990 U	R	A	1200 U	J	G	980 U			980 U		
N-Nitrosodiphenylamine	410 U			410 U			400 U			390 U	R	A	550	J	G	390 U			390 U		
4-Bromophenyl phenyl ether	410 U			410 U			400 U			390 U	R	A	480 U	J	G	390 U			390 U		
Hexachlorobenzene	410 U			410 U			400 U			390 U	R	A	480 U	J	G	390 U			390 U		
Pentachlorophenol	1000 U			1000 U			1000 U			390 L	J	BG	1200 U	J	G	980 U			980 U		
Phenanthrene	410 U			410 U			400 U			600	J	G	490	J	G	390 U			390 U		
Anthracene	410 U			410 U			400 U			64 L	J	BG	88 L	J	BG	390 U			390 U		
Carbazole	410 U			410 U			400 U			390 U	R	A	480 U	J	G	390 U			390 U		
Di-n-butylphthalate	410 U	J	D	410 U	J	D	400 U	J	D	270 L	J	BGJ	480 U	J	DG	390 U	J	D	390 U	J	D
Fluoranthene	410 U			410 U			400 U			120 L	J	BG	240 L	J	BG	390 U			390 U		
Pyrene	410 U			410 U			400 U			200 L	J	BG	270 L	J	BG	390 U			390 U		
Butylbenzylphthalate	410 U			410 U			400 U			390 U	R	A	480 U	R	A	390 U			390 U		
3,3'-Dichlorobenzidine	410 U			410 U			400 U			390 U	R	A	480 U	R	A	390 U			390 U		
Benzo(a)anthracene	410 U			410 U			400 U			390 U	R	A	480 U	R	A	390 U			390 U		
Chrysene	410 U			410 U			400 U			390 U	R	A	480 U	R	A	390 U			390 U		
bis(2-Ethylhexyl)phthalate	41 L	J	BJ	410 U			47 L	J	BJ	750	J	GJ	480 U	R	A	390 U	J	DI	130 L	J	BJ
Di-n-octylphthalate	410 U			410 U	J	D	400 U			390 U	J	DG	480 U	J	DG	390 U			390 U		
Benzo(b)fluoranthene	410 U			410 U			400 U			390 U	R	A	480 U	J	G	390 U			390 U		
Benzo(k)fluoranthene	410 U			410 U			400 U			390 U	R	A	480 U	J	G	390 U			390 U		
Benzo(a)pyrene	410 U			410 U			400 U			390 U	R	A	480 U	J	G	390 U			390 U		
Indeno(1,2,3-cd)pyrene	410 U			410 U			400 U			390 U	R	A	480 U	J	G	390 U			390 U		
Dibenz(a,h)anthracene	410 U			410 U			400 U			390 U	R	A	480 U	J	G	390 U			390 U		
Benzo(g,h,i)perylene	410 U			410 U			400 U			390 U	R	A	480 U	J	G	390 U			390 U		
Percent Solids	80 %			80 %			82 %			84 %			68 %			85 %			85 %		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

Case No.: 25218 Memo #02
Site: Victoria Golf Course
Lab.: American Technical & Analytical Services (ATAS)
Reviewer: Adriane Scheele, ESAT/Lockheed
Date: February 10, 1997

ANALYTICAL RESULTS
TABLE 1A

Analysis Type: Low Level Soil Samples for Semivolatiles

Concentration in µg/Kg

Station Location	SS-4-20			SS-5-10			SS-5-20			SS-7-10			SS-7-20			SS-9-10			SS-10-10		
Sample I.D.	YX346 BG			YX347			YX348			YX351			YX352			YX355 D2			YX356 D1		
Date of Collection	12/10/96			12/10/96			12/10/96			12/9/96			12/9/96			12/9/96			12/10/96		
Semivolatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Phenol	410 U			410 U			400 U			9400			800			390 U			390 U		
bis(2-Chloroethyl)ether	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
2-Chlorophenol	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
1,3-Dichlorobenzene	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
1,4-Dichlorobenzene	410 U			410 U			400 U			29 L	J	B	50 L	J	B	390 U			390 U		
1,2-Dichlorobenzene	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
2-Methylphenol	410 U			410 U			400 U			100 L	J	B	480 U			390 U			390 U		
2,2'-oxybis(1-Chloropropane)	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
4-Methylphenol	410 U			410 U			400 U			5900			1900			390 U			390 U		
N-Nitroso-di-n-propylamine	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
Hexachloroethane	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
Nitrobenzene	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
Isophorone	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
2-Nitrophenol	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
2,4-Dimethylphenol	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
bis(2-Chloroethoxy)methane	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
2,4-Dichlorophenol	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
1,2,4-Trichlorobenzene	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
Naphthalene	410 U			410 U			400 U			900			1100			390 U			390 U		
4-Chloroaniline	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
Hexachlorobutadiene	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
4-Chloro-3-methylphenol	410 U			410 U			400 U			390 U			480 U			390 U			390 U		
2-Methylnaphthalene	410 U			410 U			400 U			250 L	J	B	460 L	J	B	390 U			390 U		
Hexachlorocyclopentadiene	410 U			410 U			400 U			390 U	J	G	480 U			390 U			390 U		
2,4,6-Trichlorophenol	410 U			410 U			400 U			390 U	J	G	480 U			390 U			390 U		
2,4,5-Trichlorophenol	1000 U			1000 U			1000 U			990 U	J	G	1200 U			980 U			980 U		
2-Chloronaphthalene	410 U			410 U			400 U			390 U	J	G	480 U			390 U			390 U		
2-Nitroaniline	1000 U			1000 U			1000 U			990 U	J	G	1200 U			980 U			980 U		
Dimethylphthalate	410 U			410 U			400 U			390 U	J	G	480 U			390 U			390 U		
Acenaphthylene	410 U			410 U			400 U			390 U	J	G	480 U			390 U			390 U		
2,6-Dinitrotoluene	410 U			410 U			400 U			390 U	J	G	480 U			390 U			390 U		
3-Nitroaniline	1000 U			1000 U			1000 U			990 U	J	G	1200 U			980 U			980 U		

Station Location	SS-1-10			SS-1-20			SS-2-10			SS-2-20			SS-3-10			SS-3-20			SS-4-10		
Sample I.D.	YX339 D1			YX340			YX341 D2			YX342			YX343 BG			YX344 BG			YX345 BG		
Date of Collection	12/10/96			12/10/96			12/9/96			12/9/96			12/10/96			12/10/96			12/10/96		
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Acenaphthene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2,4-Dinitrophenol	990 U			980 U			940 U			1000 U			1200 U			1000 U			980 U		
4-Nitrophenol	990 U			980 U			940 U			1000 U			1200 U			1000 U			980 U		
Dibenzofuran	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2,4-Dinitrotoluene	390 U			390 U			380 U			420 U		H	470 U			410 U			390 U		
Diethylphthalate	24 L	J	BJ	22 L	J	BJ	23 L	J	BJ	38 L	J	BJ	30 L	J	BJ	23 L	J	BJ	26 L	J	BJ
4-Chlorophenyl phenyl ether	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Fluorene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
4-Nitroaniline	990 U			980 U			940 U			1000 U			1200 U			1000 U			980 U		
4,6-Dinitro-2-methylphenol	990 U			980 U			940 U			1000 U			1200 U			1000 U			980 U		
N-Nitrosodiphenylamine	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
4-Bromophenyl phenyl ether	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Hexachlorobenzene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Pentachlorophenol	990 U			980 U			940 U			1000 U			1200 U			1000 U			980 U		
Phenanthrene	390 U			390 U			54 L	J	B	420 U			470 U			410 U			390 U		
Anthracene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Carbazole	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Di-n-butylphthalate	390 U	J	D	390 U			380 U	J	D	420 U	J	D	470 U	J	D	410 U	J	D	390 U	J	D
Fluoranthene	390 U			390 U			38 L	J	B	420 U			470 U			410 U			390 U		
Pyrene	390 U			390 U	J	F	61 L	J	B	420 U			470 U			410 U			390 U		
Butylbenzylphthalate	390 U			390 U			32 L	J	BJ	420 U			470 U			22 L	J	BJ	390 U		
3,3'-Dichlorobenzidine	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Benzo(a)anthracene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Chrysene	390 U			390 U			38 L	J	B	420 U			470 U			410 U			390 U		
bis(2-Ethylhexyl)phthalate	390 U			88 L	J	BJ	2300		IJ	420 U			61 L	J	BJ	40 L	J	BJ	49 L	J	BJ
Di-n-octylphthalate	390 U	J	D	390 U	J	F	380 U			420 U			470 U	J	D	410 U			390 U	J	D
Benzo(b)fluoranthene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Benzo(k)fluoranthene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Benzo(a)pyrene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Indeno(1,2,3-cd)pyrene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Dibenz(a,h)anthracene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Benzo(g,h,i)perylene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Percent Solids	84 %			85 %			88 %			79 %			70 %			81 %			85 %		

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

Case No.: 25218 Memo #02
TABLE 1A
Site: Victoria Golf Course
Lab.: American Technical & Analytical Services (ATAS)
Analysis Type: Low Level Soil Samples for Semivolatiles
Reviewer: Adriane Scheele, ESAT/Lockheed
Date: February 10, 1997
Concentration in µg/Kg

Station Location	SS-1-10			SS-1-20			SS-2-10			SS-2-20			SS-3-10			SS-3-20			SS-4-10		
Sample I.D.	YX339 D1			YX340			YX341 D2			YX342			YX343 BG			YX344 BG			YX345 BG		
Date of Collection	12/10/96			12/10/96			12/9/96			12/9/96			12/10/96			12/10/96			12/10/96		
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Phenol	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
bis(2-Chloroethyl)ether	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2-Chlorophenol	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
1,3-Dichlorobenzene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
1,4-Dichlorobenzene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
1,2-Dichlorobenzene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2-Methylphenol	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2,2'-oxybis(1-Chloropropane)	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
4-Methylphenol	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
N-Nitroso-di-n-propylamine	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Hexachloroethane	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Nitrobenzene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Isophorone	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2-Nitrophenol	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2,4-Dimethylphenol	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
bis(2-Chloroethoxy)methane	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2,4-Dichlorophenol	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
1,2,4-Trichlorobenzene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Naphthalene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
4-Chloroaniline	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Hexachlorobutadiene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
4-Chloro-3-methylphenol	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2-Methylnaphthalene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Hexachlorocyclopentadiene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2,4,6-Trichlorophenol	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2,4,5-Trichlorophenol	990 U			980 U			940 U			1000 U			1200 U			1000 U			980 U		
2-Chloronaphthalene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2-Nitroaniline	990 U			980 U			940 U			1000 U			1200 U			1000 U			980 U		
Dimethylphthalate	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
Acenaphthylene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
2,6-Dinitrotoluene	390 U			390 U			380 U			420 U			470 U			410 U			390 U		
3-Nitroaniline	990 U			980 U			940 U			1000 U			1200 U			1000 U			980 U		

Station Location	SS-6-10			SS-8-10			SS-8-20			Method Blank			CRQL								
Sample I.D.	YX349			YX353			YX354			SBLK2											
Date of Collection	1/8/97			1/8/97			1/8/97														
Semivolatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Acenaphthene	450 U			390 U			120 L	J	A	330 U			330								
2,4-Dinitrophenol	1100 U	J	E	990 U	J	E	1000 U	J	E	830 U			830								
4-Nitrophenol	1100 U	J	E	990 U	J	E	1000 U	J	E	830 U			830								
Dibenzofuran	450 U			390 U			54 L	J	A	330 U			330								
2,4-Dinitrotoluene	450 U	J	E	390 U	J	E	420 U	J	EG	330 U			330								
Diethylphthalate	450 U			390 U			35 L	J	AH	330 U			330								
4-Chlorophenyl phenyl ether	450 U			390 U			420 U			330 U			330								
Fluorene	49 L	J	A	390 U			150 L	J	A	330 U			330								
4-Nitroaniline	1100 U	J	E	990 U	J	E	1000 U	J	E	830 U			830								
4,6-Dinitro-2-methylphenol	1100 U			990 U			1000 U			830 U			830								
N-Nitrosodiphenylamine	450 U			390 U			420 U			330 U			330								
4-Bromophenyl phenyl ether	450 U			390 U			420 U			330 U			330								
Hexachlorobenzene	450 U			390 U			420 U			330 U			330								
Pentachlorophenol	1100 U			990 U			1000 U			830 U			830								
Phenanthrene	120 L	J	A	390 U			1400			330 U			330								
Anthracene	450 U			390 U			550			330 U			330								
Carbazole	450 U			390 U			410 L	J	A	330 U			330								
Di-n-butylphthalate	2000			390 U			420 U	J	C	330 U			330								
Fluoranthene	46 L	J	A	390 U			2100			330 U			330								
Pyrene	42 L	J	A	390 U			1300		G	330 U			330								
Butylbenzylphthalate	450 U			390 U			420 U			330 U			330								
3,3'-Dichlorobenzidine	450 U			390 U			420 U			330 U			330								
Benzo(a)anthracene	450 U			390 U			980			330 U			330								
Chrysene	40 L	J	A	390 U			1000			330 U			330								
bis(2-Ethylhexyl)phthalate	2000		H	390 U	J	C	16000			27 L	J	AC	330								
Di-n-octylphthalate	43 L	J	AH	390 U			420 U			330 U			330								
Benzo(b)fluoranthene	450 U			390 U			670			330 U			330								
Benzo(k)fluoranthene	450 U			390 U			630			330 U			330								
Benzo(a)pyrene	450 U			390 U			830			330 U			330								
Indeno(1,2,3-cd)pyrene	450 U			390 U			420			330 U			330								
Dibenz(a,h)anthracene	450 U			390 U			250 L	J	A	330 U			330								
Benzo(g,h,i)perylene	450 U			390 U			440			330 U			330								
Percent Solids	73 %			84 %			79 %			N/A			N/A								

Val-Validity. Refer to Data Qualifiers in Table 1B.

Com-Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL-Contract Required Quantitation Limit

N/A-Not Applicable

D1, D2, etc. -Field Duplicate Pairs

FB-Field Blank, EB-Equipment Blank, TB-Trip Blank

BG-Background Sample

Case No.: 25268 Memo #01
Site: Victoria Golf Course
Lab.: Southwest Labs of Oklahoma, Inc. (SWOK)
Reviewer: Adriane Scheele, ESAT/Lockheed
Date: February 21, 1997

ANALYTICAL RESULTS
TABLE 1A

Analysis Type: Low Level Soil Samples for Semivolatiles

Concentration in µg/Kg

Station Location	SS-6-10			SS-8-10			SS-8-20			Method Blank			CRQL								
Sample I.D.	YX349			YX353			YX354			SBLK2											
Date of Collection	1/8/97			1/8/97			1/8/97														
Semivolatile Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Phenol	450 U		-	390 U			420 U			330 U			330								
bis(2-Chloroethyl)ether	450 U			390 U			420 U			330 U			330								
2-Chlorophenol	450 U			390 U			420 U			330 U			330								
1,3-Dichlorobenzene	450 U			390 U			420 U			330 U			330								
1,4-Dichlorobenzene	61 L	J	A	390 U			44 L	J	A	330 U			330								
1,2-Dichlorobenzene	450 U			390 U			34 L	J	A	330 U			330								
2-Methylphenol	450 U			390 U			420 U			330 U			330								
2,2'-oxybis(1-Chloropropane)	450 U			390 U			420 U			330 U			330								
4-Methylphenol	450 U			390 U			240 L	J	A	330 U			330								
N-Nitroso-di-n-propylamine	450 U			390 U			420 U			330 U			330								
Hexachloroethane	450 U			390 U			420 U			330 U			330								
Nitrobenzene	450 U			390 U			420 U			330 U			330								
Isophorone	450 U			390 U			420 U			330 U			330								
2-Nitrophenol	450 U			390 U			420 U			330 U			330								
2,4-Dimethylphenol	450 U			390 U			420 U			330 U			330								
bis(2-Chloroethoxy)methane	450 U			390 U			420 U			330 U			330								
2,4-Dichlorophenol	450 U			390 U			420 U			330 U			330								
1,2,4-Trichlorobenzene	450 U			390 U			420 U			330 U			330								
Naphthalene	200 L	J	A	390 U			190 L	J	A	330 U			330								
4-Chloroaniline	450 U			390 U			420 U			330 U			330								
Hexachlorobutadiene	450 U			390 U			420 U			330 U			330								
4-Chloro-3-methylphenol	450 U			390 U			420 U			330 U			330								
2-Methylnaphthalene	110 L	J	A	390 U			130 L	J	A	330 U			330								
Hexachlorocyclopentadiene	450 U			390 U			420 U			330 U			330								
2,4,6-Trichlorophenol	450 U			390 U			420 U			330 U			330								
2,4,5-Trichlorophenol	1100 U			990 U			1000 U			830 U			830								
2-Chloronaphthalene	24 L	J	A	390 U			420 U			330 U			330								
2-Nitroaniline	1100 U			990 U			1000 U			830 U			830								
Dimethylphthalate	46 L	J	AH	390 U			420 U			330 U			330								
Acenaphthylene	450 U			390 U			420 U			330 U			330								
2,6-Dinitrotoluene	450 U			390 U			420 U			330 U			330								
3-Nitroaniline	1100 U			990 U			1000 U			830 U			830								

LOCKHEED MARTIN

YGC
MSTOLS/
f.no1
11.20/Sw

Lockheed Martin Environmental Services
Environmental Services Assistance Team, Region 9
301 Howard Street, Suite 970, San Francisco, CA 94105
Phone: 415-278-0570 Fax: 415-278-0588

rec'd 2/19/97

cc. DTSC 2/26/97

MEMORANDUM

TO: Rachel Loftin
Site Assessment Manager
States Planning and Assessment Office, SFD-5

THROUGH: Rose Fong Rose
ESAT Regional Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Jack Berges
Team Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68D60005
Work Assignment No.: 09-96-0-4
Technical Direction No.: 9604113

DATE: February 14, 1997

SUBJECT: Review of Analytical Data

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Victoria Golf Course
SITE ACCOUNT NO.:	ZZ
CERCLIS I.D. NO.:	CAD980818926
CASE NO.:	25218 Memo #03
SDG NO.:	MYX292
LABORATORY:	Analytical Resources, Inc. (ARI)
ANALYSIS:	Total Metals
SAMPLE NO.:	6 Water and 14 Soil Samples (See Case Summary)
COLLECTION DATE:	December 9 through 12, 1996
REVIEWER:	Dina David-Bailey, ESAT/Lockheed

The comments and qualifications presented in this report have been reviewed and approved by the EPA Work Assignment Manager (WAM) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Deirdre O'Leary (ESAT/Lockheed) at (415) 278-0585, or Rose Fong (QA Office/EPA) at (415) 744-1534.

Attachment

cc: Bruce Woods, TPO USEPA Region 10

TPO: [ ]FYI [ ]Attention [X]Action

SAMPLING ISSUES: [ ]Yes [X]No

LOCKHEED MARTIN

Data Validation Report

Case No.: 25218 Memo #03
Site: Victoria Golf Course
Laboratory: Analytical Resources, Inc. (ARI)
Reviewer: Dina David-Bailey, ESAT/Lockheed
Date: February 14, 1997

I. Case Summary

SAMPLE INFORMATION: SAMPLE #: Water: MYX292, MYX294, and MYX297 through MYX300
Soil: MYX308 through MYX317, MYX320, MYX321, MYX324, and MYX325

COLLECTION DATE: December 9 through 12, 1996
SAMPLE RECEIPT DATE: December 13, 1996
CONCENTRATION & MATRIX: Low Concentration Groundwater and Soil

FIELD QC: Field Blanks (FB): None
Equipment Blanks (EB): MYX299, MYX300, MYX301*, and MYX302* (*see Additional Comments)
Background Samples (BG): MYX294 and MYX312 through MYX315
Duplicates (D1): MYX308 and MYX325
(D2): MYX310 and MYX324

LABORATORY QC: Matrix Spike: MYX292 (Water) and MYX311 (Soil)
Duplicates: MYX292 (Water) and MYX311 (Soil)
ICP Serial Dilution: MYX292 (Water) and MYX311 (Soil)

ANALYSIS: Total Metals

Analyte		Sample Preparation and Digestion Date	Analysis Date
ICP Metals		December 31, 1996 and January 2, 1997	January 9, 1997
GFAA:	Arsenic	December 31, 1996 and January 2, 1997	January 10 and 13, 1997
	Lead	December 31, 1996 and January 2, 1997	January 10, 1997
	Selenium	December 31, 1996 and January 2, 1997	January 9 and 10, 1997
	Thallium	December 31, 1996 and January 2, 1997	January 9, 1997
Mercury		December 30, 1996 and January 2, 1997	January 2, 1997
Percent Solids		Not Applicable	December 31, 1996

TPO ACTION:

The results reported for antimony in soil samples MYX309 through MYX315, MYX317, MYX320, MYX321, MYX324, and MYX325 and for selenium in water samples MYX292, MYX294, MYX297, and MYX298 are considered unacceptable as less than 30% of the matrix spike was recovered. See Comment A.

TPO ATTENTION:

None.

SAMPLING ISSUES:

None.

ADDITIONAL COMMENTS:

*The results for equipment blank samples MYX301 and MYX302 are included in Case 25218 Memo #04, SDG MYX293.

The analytical results with qualifications are listed in Table 1A. The definitions of the data qualifiers used in Table 1A are listed in Table 1B. Laboratory blanks and associated samples are listed below the data qualifiers in Table 1B. This report was prepared in accordance with the EPA Contract Laboratory Program Inorganic Statement of Work (SOW), ILM04.0, and the document "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review," February 1994.

II. Validation Summary

The data were evaluated based on the following parameters:

Parameter	Acceptable	Comment
1. Data Completeness	Yes	
2. Sample Preservation and Holding Times	Yes	
3. Calibration	Yes	I
a. Initial Calibration Verification		
b. Continuing Calibration Verification		
c. Calibration Blank		
d. CRDL Standard		
4. Blanks	Yes	
a. Laboratory Preparation Blank		
b. Field Blank		
c. Equipment Blank		
5. ICP Interference Check Sample Analysis	Yes	
6. Laboratory Control Sample Analysis	Yes	
7. Spiked Sample Analysis	No	A,B
8. Laboratory Duplicate Sample Analysis	No	D
9. Field Duplicate Sample Analysis	No	H
10. GFAA QC Analysis	No	E
a. Duplicate Injections		
b. Analytical Spikes		
c. Method of Standard Addition		
11. ICP Serial Dilution Analysis	No	F
12. Sample Quantitation	Yes	C,G
13. Sample Result Verification	Yes	

III. Validity and Comments

A. The following results are rejected because of matrix spike recovery results outside method QC limits. The results are flagged "R" in Table 1A.

- Antimony in soil samples MYX309 through MYX315, MYX317, MYX320, MYX321, MYX324, and MYX325
- Selenium in water samples MYX292, MYX294, MYX297, and MYX298

The matrix spike recovery results for antimony in QC sample MYX311 and for selenium in QC sample MYX292 did not meet the 75-125% criteria for accuracy. The percent recovery and possible percent bias for each analyte are presented below and are based on an ideal recovery of 100%.

Analyte	MYX311 Soil % Recovery	MYX311 Soil % Bias
Antimony	28	-72

Analyte	MYX292 Water % Recovery	MYX292 Water % Bias
Selenium	29	-71

The results reported for antimony and selenium in the samples listed above were below the method detection limit (MDL) and instrument detection limit (IDL), respectively, and are considered unacceptable as less than 30% of the matrix spike was recovered. The low matrix spike recovery indicates an analytical deficiency and false negatives may exist.

According to the ILM04.0 Inorganic SOW, when the pre-digestion spike recovery results for ICP analytes (except silver) fall outside the control limits of 75-125%, a post-digestion spike must be performed for those elements that do not meet the specified criteria. A post-digestion spike recovery result of 107% was obtained for antimony in QC sample MYX311. Since the post-digestion spike recovery was acceptable, the low pre-digestion spike recovery result of 28% obtained for antimony may indicate sample nonhomogeneity, poor laboratory technique or matrix effects which may interfere with accurate analysis, depressing the analytical result.

Matrix spike sample analysis provides information about the effect of the sample matrix on sample preparation and measurement methodology.

B. The following results are estimated because of matrix spike recovery results outside method QC limits. The results are flagged "J" in Table 1A.

- Antimony in soil samples MYX308 and MYX316
- Mercury in water samples MYX292, MYX294, MYX297, and MYX298
- Selenium and zinc in all of the soil samples

The matrix spike recovery results for antimony, selenium, and zinc in QC sample MYX311 and for mercury in QC sample MYX292 did not meet the 75-125% criteria for accuracy. The percent recovery and possible percent bias for each analyte are presented below and are based on an ideal recovery of 100%.

Analyte	MYX311 Soil % Recovery	MYX311 Soil % Bias
Antimony	28	-72
Selenium	67	-33
Zinc	260	+160

Analyte	MYX292 Water % Recovery	MYX292 Water % Bias
Mercury	37	-63

Results above the IDL or the MDL are considered quantitatively uncertain. The results reported for antimony in soil samples MYX308 and MYX316 may be biased low. Since the results reported for mercury in water samples MYX292, MYX294, MYX297, and MYX298 and for selenium in all of the soil samples are nondetected, false negatives may exist. The results reported for zinc in all of the soil samples may be biased high.

According to the ILM04.0 Inorganic SOW, when the pre-digestion spike recovery results for ICP analytes (except silver) fall outside the control limits of 75-125%, a post-digestion spike must be performed for those elements that do not meet the specified criteria. Post-digestion spike recovery results of 107% for antimony and 94% for zinc were obtained in QC sample MYX311. Since the post-digestion spike recoveries are acceptable, the low pre-digestion spike recovery of 28% obtained for antimony and the high pre-digestion spike recovery of 260% obtained for zinc may indicate sample nonhomogeneity, poor laboratory technique or matrix effects which may interfere with accurate analysis, enhancing or depressing the analytical result.

A 74% recovery was obtained for arsenic in the matrix spike analysis of QC sample MYX311. This percent recovery, though marginally below the 75-125% criteria for accuracy, is not expected to significantly affect the results reported for arsenic in any of the soil samples.

C. The following results are estimated and are flagged "J" in Table 1A.

- All results above the instrument detection limit or the method detection limit but below the contract required detection limit (denoted with an "L" qualifier)

Results above the IDL for waters or the MDL for soils but below the contract required detection limit (CRDL) are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

D. The following results are estimated because of laboratory duplicate results outside method QC limits. The results are flagged "J" in Table 1A.

- Barium in all of the soil samples

Laboratory duplicate results did not meet the ±35 relative percent difference (RPD) and ±2X CRDL criteria for precision as listed below.

Analyte	MYX311 Soil RPD
Barium	70

The results reported for barium in all of the soil samples are considered quantitatively uncertain.

Duplicate analyses demonstrate the analytical precision obtained for each sample matrix. The imprecision between duplicate results may be due to sample nonhomogeneity, poor laboratory technique, or method defects.

E. The following results are estimated because of GFAA analytical spike recovery results outside method QC limits. The results are flagged "J" in Table 1A.

- Selenium in samples MYX294, MYX297, MYX308 through MYX317, MYX320, and MYX321
- Thallium in samples MYX298, MYX313, and MYX315

The analytical spike recovery results for selenium and thallium in the samples listed above did not meet the 85-115% criteria for accuracy. The percent recovery and possible percent bias for each analyte are presented below and are based on an ideal recovery of 100%.

Analyte	Sample Number	% Recovery	% Bias
Selenium	MYX294	83	-17
	MYX297	65	-35
	MYX308	83	-17
	MYX309	83	-17
	MYX310	81	-19
	MYX311	65	-35
	MYX312	84	-16
	MYX313	40	-60
	MYX314	82	-18
	MYX315	58	-42
	MYX316	81	-19
	MYX317	80	-20
	MYX320	70	-30
	MYX321	50	-50
Thallium	MYX298	80	-20
	MYX313	56	-44
	MYX315	60	-40

The post-digestion spike recovery results for selenium and thallium, as noted above, show an analytical deficiency. Since the results reported for selenium and thallium in the samples listed above are nondetected, false negatives may exist.

The post-digestion analytical spike recovery results of 58% in duplicate sample MYX311 for selenium and 42% in duplicate sample MYX311 for thallium also did not meet the 85-115% criteria for accuracy.

It should be noted that the results for selenium in samples MYX294 and MYX297 were previously rejected. Please refer to Comment A.

Arsenic, lead, selenium and thallium were analyzed by the graphite furnace atomic absorption (GFAA) technique, which requires that a post-digestion analytical spike be performed for each sample to establish the accuracy of the individual analytical determination.

F. The following results are estimated because of ICP serial dilution results outside method QC limits. The results are flagged "J" in Table 1A.

- Copper in all of the soil samples

The percent difference of the ICP serial dilution analysis of sample MYX311 did not meet the 10% criterion for the analyte shown below.

Analyte	MYX311 Soil % Difference
Copper	13

The results reported for copper in all of the soil samples are considered quantitatively uncertain. Chemical and physical interferences may exist due to sample matrix effects.

A five fold dilution of the laboratory QC sample is performed in association with the ICP procedure to indicate whether interference exists due to sample matrix effects. If the analyte concentration is sufficiently high (minimally a factor of 50 above the IDL in the original sample), the five fold serial dilution must agree within 10% of the original results after correction for dilution.

G. The following samples were diluted and the quantitation limits for the analytes shown below have been raised.

- Lead in sample MYX298
- Selenium in samples MYX292, MYX298, MYX308 through MYX310, MYX312, MYX314, MYX316, MYX317, MYX324, and MYX325
- Thallium in samples MYX308 through MYX312, MYX314, MYX316, MYX317, MYX320, MYX321, MYX324, and MYX325

Sample MYX298 for lead was reanalyzed at a five-fold dilution because of a high background obtained in the initial undiluted analysis. The samples listed above for selenium and thallium were diluted by a factor of five because the spike recovery obtained in the original analysis was less than 40%. The low percent recovery obtained for selenium and thallium may be due to chemical or physical interferences. Dilution of the samples is performed to reduce any matrix interferences which may be present and which may be responsible for the low analytical spike recovery. The quantitation limits reported in Table 1A for lead, selenium, and thallium in the samples listed above were raised by the dilution factor.

Note that the results for arsenic in the diluted analyses of samples MYX310 and MYX314 are between the MDL and the CRDL. Therefore these results, which are greater than the CRDL when multiplied by the dilution factor, have been flagged "L" (see Comment C).

It should be noted that the results for selenium in samples MYX292 and MYX298 were previously rejected. Please refer to Comment A.

Analytical spikes are post-digestion spikes prepared prior to analysis by adding a known quantity of the analyte to an aliquot of the digested sample. Arsenic, lead, selenium, and thallium were analyzed by the GFAA technique, which requires the analysis of analytical spikes.

H. In the analysis of the field duplicate pairs, the following RPDs were obtained for the analytes listed below.

Analyte	MYX310 D2 MYX324 D2 RPD
Arsenic	122
Calcium	72
Copper	167
Lead	182
Zinc	165

The results are expected to vary more than laboratory duplicates (±35 RPD or ±2X CRDL criteria for precision) since sampling variability is included in the measurement. The effect on the quality of the data is not known.

The analysis of field duplicate samples is a measure of both field and analytical precision. The imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix, sample nonhomogeneity, poor sampling or laboratory technique, or method defects.

I. A low recovery of 60% was reported for mercury in the analysis of the CRDL standard (CRA) for soils. While there are no criteria established for CRDL standard recoveries, low recoveries indicate uncertainty for sample results near the CRDL. The low CRA recovery may indicate low bias and possible false negatives for mercury results in all of the soil samples except sample MYX320.

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #03
Site: Victoria Golf Course
Lab.: Analytical Resources, Inc. (ARI)
Reviewer: Dina David-Bailey, ESAT/Lockheed
Date: February 14, 1997

Analysis Type: Low Concentration Groundwater Samples for Total Metals

Concentration in µg/L

Station Location	GW-2-1			GW-4-1			GW-9-1			GW-10-1			GW-11-1			GW-12-1			Lab Blank 1		
Sample I.D.	MYX292			MYX294 BG			MYX297			MYX298			MYX299 EB			MYX300 EB					
Date of Collection	12/9/96			12/12/96			12/10/96			12/11/96			12/9/96			12/10/96					
Parameter	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Aluminum	20.0 U			82.0 L	J	C	20.0 U			20.0 U			34.9 L	J	C	20.0 U			20.0 U		
Antimony	50.0 U			50.0 U			50.0 U			50.0 U			50.0 U			50.0 U			50.0 U		
Arsenic	6.6 L	J	C	10.4			6.8 L	J	C	1.2 L	J	C	1.0 U			1.0 U			1.0 U		
Barium	95.7 L	J	C	103 L	J	C	60.2 L	J	C	34.7 L	J	C	1.0 U			1.0 U			1.0 U		
Beryllium	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Cadmium	2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U		
Calcium	1020000			46300			467000			1100000			211 L	J	C	26.8 L	J	C	20.0 U		
Chromium	5.0 U			5.0 U			5.0 U			5.0 U			5.0 U			5.0 U			5.0 U		
Cobalt	3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U		
Copper	2.0 U			2.0 U			2.0 U			2.0 U			7.0 L	J	C	2.0 U			2.0 U		
Iron	1820			56.5 L	J	C	20.0 U			18200			22.7 L	J	C	20.0 U			20.0 U		
Lead	1.0 U			1.0 U			1.0 U			5.0 U		G	1.0 U			1.0 U			1.0 U		
Magnesium	260000			15900			119000			327000			67.0 L	J	C	20.0 U			20.0 U		
Manganese	2690			154			676			1970			1.0 U			1.0 U			1.0 U		
Mercury	0.10 U	J	B	0.10 U	J	B	0.10 U	J	B	0.10 U	J	B	0.10 U			0.10 U			0.10 U		
Nickel	10.0 U			10.0 U			10.0 U			10.0 U			10.0 U			10.0 U			10.0 U		
Potassium	18300			6050			10200			21000			400 U			400 U			400 U		
Selenium	5.0 U	R	AG	1.0 U	R	AE	1.0 U	R	AE	5.0 U	R	AG	1.0 U			1.0 U			1.0 U		
Silver	3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U		
Sodium	580000			54800			227000			1380000			432 L	J	C	50.0 U			50.0 U		
Thallium	1.0 U			1.0 U			1.0 U			1.0 U	J	E	1.0 U			1.0 U			1.0 U		
Vanadium	2.0 U			2.0 U			7.0 L	J	C	2.0 U			2.3 L	J	C	2.3 L	J	C	2.0 U		
Zinc	98.5			4.0 U			53.1			64.6			4.0 U			4.0 U			4.0 U		

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL-Instrument Detection Limit.
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
CRDL-Contract Required Detection Limit

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #03
Site: Victoria Golf Course
Lab.: Analytical Resources, Inc. (ARI)
Reviewer: Dina David-Bailey, ESAT/Lockheed
Date: February 14, 1997

Analysis Type: Low Concentration Groundwater Samples for Total Metals

Concentration in µg/L

Sample I.D.	IDL			CRDL																	
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	20.0			200																	
Antimony	50.0			60.0																	
Arsenic	1.0			10.0																	
Barium	1.0			200																	
Beryllium	1.0			5.0																	
Cadmium	2.0			5.0																	
Calcium	20.0			5000																	
Chromium	5.0			10.0																	
Cobalt	3.0			50.0																	
Copper	2.0			25.0																	
Iron	20.0			100																	
Lead	1.0			3.0																	
Magnesium	20.0			5000																	
Manganese	1.0			15.0																	
Mercury	0.10			0.20																	
Nickel	10.0			40.0																	
Potassium	400			5000																	
Selenium	1.0			5.0																	
Silver	3.0			10.0																	
Sodium	50.0			5000																	
Thallium	1.0			10.0																	
Vanadium	2.0			50.0																	
Zinc	4.0			20.0																	

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL-Instrument Detection Limit.
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
CRDL-Contract Required Detection Limit

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #03
Site: Victoria Golf Course
Lab.: Analytical Resources, Inc. (ARI)
Reviewer: Dina David-Bailey, ESAT/Lockheed
Date: February 14, 1997

Analysis Type: Low Concentration Soil Samples for Total Metals

Concentration in mg/Kg

Station Location	SS-1-10			SS-1-20			SS-2-10			SS-2-20			SS-3-10			SS-3-20			SS-4-10		
Sample I.D.	MYX308 D1			MYX309			MYX310 D2			MYX311			MYX312 BG			MYX313 BG			MYX314 BG		
Date of Collection	12/10/96			12/10/96			12/10/96			12/10/96			12/10/96			12/10/96			12/10/96		
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	28300			25400			25700			14100			32500			15700			22800		
Antimony	13.6 L	J	BC	11.8 U	R	A	11.2 U	R	A	12.5 U	R	A	12.3 U	R	A	11.4 U	R	A	11.1 U	R	A
Arsenic	5.0			5.5			3.2 L	J	CGH	4.5			5.9			5.9			4.4 L	J	CG
Barium	158	J	D	202	J	D	212	J	D	233	J	D	184	J	D	115	J	D	127	J	D
Beryllium	0.83 L	J	C	0.66 L	J	C	0.70 L	J	C	0.40 L	J	C	0.87 L	J	C	0.47 L	J	C	0.57 L	J	C
Cadmium	0.47 U			0.63 L	J	C	0.48 L	J	C	1.0 L	J	C	0.51 L	J	C	0.46 U			0.50 L	J	C
Calcium	7660			12400			9160		H	9090			12200			4090			14500		
Chromium	33.7			34.8			30.7			29.5			40.5			37.7			27.3		
Cobalt	15.9			14.4			12.6			7.9 L	J	C	16.5			8.9 L	J	C	11.4		
Copper	36.8	J	F	34.2	J	F	31.1	J	FH	33.1	J	F	35.5	J	F	22.4	J	F	26.7	J	F
Iron	36800			32500			31100			20400			39000			23300			28100		
Lead	10.7			11.2			10.8		H	41.8			11.3			6.0			7.7		
Magnesium	11100			10800			9820			5770			13600			6540			10000		
Manganese	617			613			486			221			496			272			438		
Mercury	0.06 U		I	0.06 L	J	CI	0.06 U		I	0.20		I	0.06 U		I	0.15		I	0.06 U		I
Nickel	28.2			24.2			20.7			13.3			29.5			17.4			18.1		
Potassium	4820			3980			5260			4170			5190			2840			5230		
Selenium	1.2 U	J	BEG	1.2 U	J	BEG	1.1 U	J	BEG	0.25 U	J	BE	1.2 U	J	BEG	0.25 U	J	BE	1.1 U	J	BEG
Silver	0.70 U			0.71 U			0.67 U			0.75 U			0.74 U			0.68 U			0.67 U		
Sodium	2690			1990			2250			1130 L	J	C	4120			847 L	J	C	875 L	J	C
Thallium	1.2 U		G	1.2 U		G	1.1 U		G	1.3 U		G	1.2 U		G	0.25 U	J	E	1.1 U		G
Vanadium	73.8			62.7			60.5			41.7			75.8			49.8			59.3		
Zinc	88.2	J	B	82.6	J	B	76.6	J	BH	179	J	B	85.2	J	B	50.9	J	B	71.9	J	B
Percent Solids	84.1 %			84.1 %			85.7 %			79.0 %			81.5 %			80.6 %			85.9 %		

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL-Instrument Detection Limit. MDL-Method Detection Limit.
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
CRDL-Contract Required Detection Limit

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #03
Site: Victoria Golf Course
Lab.: Analytical Resources, Inc. (ARI)
Reviewer: Dina David-Bailey, ESAT/Lockheed
Date: February 14, 1997

Analysis Type: Low Concentration Soil Samples for Total Metals

Concentration in mg/Kg

Station Location	SS-4-20			SS-5-10			SS-5-20			SS-7-10			SS-7-20			SS-9-10			SS-10-10		
Sample I.D.	MYX315 BG			MYX316			MYX317			MYX320			MYX321			MYX324 D2			MYX325 D1		
Date of Collection	12/10/96			12/10/96			12/10/96			12/10/96			12/9/96			12/10/96			12/10/96		
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	12100			26800			19700			10800			16400			24400			31400		
Antimony	12.3 U	R	A	16.6	J	B	12.1 U	R	A	13.8 U	R	A	14.0 U	R	A	11.0 U	R	A	11.6 U	R	A
Arsenic	4.0			9.2			15.6			6.5			7.3			13.3		H	5.5		
Barium	112	J	D	242	J	D	167	J	D	821	J	D	341	J	D	250	J	D	200	J	D
Beryllium	0.32 L	J	C	0.73 L	J	C	0.61 L	J	C	0.65 L	J	C	0.36 L	J	C	0.64 L	J	C	0.89 L	J	C
Cadmium	0.49 U			0.99 L	J	C	0.76 L	J	C	6.2			2.0			1.5			0.46 U		
Calcium	5590			24600			97400			10600			23700			19500		H	9880		
Chromium	16.3			33.0			30.9			912			48.0			33.3			39.1		
Cobalt	8.3 L	J	C	12.5			11.2 L	J	C	17.2			13.1 L	J	C	12.6			15.4		
Copper	16.9	J	F	36.6	J	F	30.3	J	F	376	J	F	176	J	F	345	J	FH	38.1	J	F
Iron	19200			34000			26000			35800			27200			28700			38200		
Lead	5.1			9.5			9.8			942			245			233		H	10.6		
Magnesium	6760			12500			15200			4720			6440			9280			11400		
Manganese	478			581			980			371			368			584			613		
Mercury	0.05 U		I	0.06 U		I	0.06 U		I	0.72			0.31		I	0.14		I	0.05 U		I
Nickel	13.9			21.8			26.9			86.8			38.8			29.0			23.8		
Potassium	2780			6710			2350			3980			4160			5200			5060		
Selenium	0.23 U	J	BE	1.1 U	J	BEG	1.2 U	J	BEG	0.28 U	J	BE	0.28 U	J	BE	1.1 U	J	BG	1.1 U	J	BG
Silver	0.74 U			0.71 U			0.72 U			1.8 L	J	C	0.86 L	J	C	0.66 U			0.70 U		
Sodium	356 L	J	C	3010			3180			1370 L	J	C	1470			763 L	J	C	2730		
Thallium	0.23 U	J	E	1.1 U		G	1.2 U		G	1.4 U		G	1.4 U		G	1.1 U		G	1.1 U		G
Vanadium	38.0			73.5			56.3			179			50.0			59.0			78.8		
Zinc	45.8	J	B	85.3	J	B	61.2	J	B	1140	J	B	832	J	B	802	J	BH	97.7	J	B
Percent Solids	81.5 %			83.1 %			80.5 %			71.5 %			70.0 %			87.9 %			84.4 %		

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.
MDL-Method Detection Limit.
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
CRDL-Contract Required Detection Limit

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #03
Site: Victoria Golf Course
Lab.: Analytical Resources, Inc. (ARI)
Reviewer: Dina David-Bailey, ESAT/Lockheed
Date: February 14, 1997

Analysis Type: Low Concentration Soil Samples for Total Metals

Concentration in mg/Kg

Sample I.D.	Lab Blank 2			MDL			CRDL														
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	4.0 U			4.0			40.0														
Antimony	10.0 U			10.0			12.0														
Arsenic	0.20 L	J	C	0.20			2.0														
Barium	0.20 U			0.20			40.0														
Beryllium	0.20 U			0.20			1.0														
Cadmium	0.40 U			0.40			1.0														
Calcium	15.6 L	J	C	4.0			1000														
Chromium	1.0 U			1.0			2.0														
Cobalt	0.60 U			0.60			10.0														
Copper	0.40 U			0.40			5.0														
Iron	4.0 U			4.0			20.0														
Lead	0.20 U			0.20			0.60														
Magnesium	4.0 U			4.0			1000														
Manganese	0.20 U			0.20			3.0														
Mercury	0.05 U			0.05			0.10														
Nickel	2.0 U			2.0			8.0														
Potassium	80.0 U			80.0			1000														
Selenium	0.20 U			0.20			1.0														
Silver	0.60 U			0.60			2.0														
Sodium	10.0 U			10.0			1000														
Thallium	0.20 U			0.20			2.0														
Vanadium	0.40 U			0.40			10.0														
Zinc	0.80 U			0.80			4.0														

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.
MDL-Method Detection Limit.
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
CRDL-Contract Required Detection Limit

LOCKHEED MARTIN

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR INORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared in accordance with the document "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review," February, 1994.

U The analyte was analyzed for, but was not detected above the level of the reported value. The reported value is either the sample quantitation limit or the sample detection limit for all the analytes except Cyanide (CN) and Mercury (Hg). For CN and Hg, the reported value is the Contract Required Detection Limit (CRDL).

L Indicates results which fall between the sample detection limit and the CRDL. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The associated value is an estimated quantity. The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample.

R The data are unusable. The analyte was analyzed for, but the presence or absence of the analyte can not be verified.

UJ A combination of the "U" and the "J" qualifier. The analyte was analyzed for but was not detected. The reported value is an estimate and may be inaccurate or imprecise.

Laboratory blanks and associated samples

Lab Blank 1: MYX292, MYX294, and MYX297 through MYX300 (Waters)

Lab Blank 2: MYX308 through MYX317, MYX320, MYX321, MYX324, and MYX325 (Soils)

LOCKHEED MARTIN

TPO: [ ]FYI [ ]Attention [X]Action Region 9

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25218 Memo #03 LABORATORY ARI

SDG NO. MYX292 SITE NAME Victoria Golf Course

SOW NO. ILM04.0 REVIEW COMPLETION DATE February 14, 1997

REVIEWER [ ] ESD [X] ESAT REVIEWER'S NAME Dina David-Bailey

NO. OF SAMPLES: WATER 6 SOIL 14 OTHER ____

	ICP	GFAA	Hg	Cyanide
1. PRESERVATION AND HOLDING TIMES	O	O	O	____
2. CALIBRATION	O	O	O	____
3. BLANKS	O	O	O	____
4. ICP INTERFERENCE CHECK SAMPLE (ICS)	O			
5. LABORATORY CONTROL SAMPLE (LCS)	O	O	O	____
6. DUPLICATE ANALYSIS	X	O	O	____
7. MATRIX SPIKE ANALYSIS	Z	Z	X	____
8. METHOD OF STANDARD ADDITION (MSA)		O		
9. ICP SERIAL DILUTION	X			
10. SAMPLE QUANTITATION	O	O	O	____
11. SAMPLE VERIFICATION	O	O	O	____
12. GFAA ANALYTICAL SPIKE		M		
13. OVERALL ASSESSMENT	Z	Z	X	____

O = Data have no problems or problems that do not affect data quality.
X = Data are qualified due to minor problems.
M = Data are qualified due to major problems.
Z = Data are unacceptable.
N/A = Not Applicable.

TPO ACTION: The results reported for antimony in soil samples MYX309 through MYX315, MYX317, MYX320, MYX321, MYX324, and MYX325 and for selenium in water samples MYX292, MYX294, MYX297, and MYX298 are considered unacceptable as less than 30% of the matrix spike was recovered.

TPO ATTENTION: None.

AREAS OF CONCERN: A low recovery of 60% was reported for mercury in the analysis of the CRDL standard (CRA) for soils. While there are no criteria established for CRDL standard recoveries, low recoveries indicate uncertainty for sample results near the CRDL. The low CRA recovery may indicate low bias and possible false negatives for mercury results in all of the soil samples except sample MYX320.

LOCKHEED MARTIN

In Reference to Case No(s).:
25218 Memo #03

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: February 5, 1997

Laboratory Name: Analytical Resources, Inc. (ARI)

Lab Contact: Jeff J. Reitan

Region: 9

Regional Contact: Dina David-Bailey, ESAT/Lockheed

Call Initiated By: _____ Laboratory __X__ Region

In reference to data for the following sample delivery group(s):
SDG No. MYX292 (Groundwater and Soil Samples for Total Metals)

Summary of Questions/Issues Discussed:

1. The results reported on Form 1 (page 7), Form 6 (pg. 62), and Form 9 (page 68) for sodium in samples MYX292 and MYX292L appear to be incorrect. Pages 220 and 221 of the raw data indicate a result of 580,000 ug/L for sample MYX292 and a result of 555,300 ug/L for sample MYX292L. Please clarify.

2. An incorrectly calculated MSA result for arsenic in sample MYX312 was reported on Form 1 (page 17). The correct result should be 5.7 mg/Kg, not 5.9 mg/Kg as reported. Please clarify.

3. The benchsheet for %Solids determination (page 467) shows a tare + dry sample weight of 8.388 grams for sample MYX325; however, this weight was transcribed incorrectly as 8.338 grams on the calculation sheet (page 466). An 84.4% solids was obtained by the data validator based on the benchsheet data, as opposed to 83.8% reported on Form 1 (page 26) for sample MYX325. Please clarify.

4. The QC results reported on the forms (pages 34-40, etc.) for arsenic appear to be from a different analysis, not associated with this SDG. The QC results obtained for arsenic from the 1-13-97 MSA analyses do not match the reported QC results. Please clarify.

5. (a) The ICP runlog does not include the water samples.
   (b) Data for sample MYX292L were reported but this sample was not marked with an "X" on page 78 of the ICP runlog.
   (c) Please explain the large time gap between a CCB (run time: 1925) and sample MYX298 (run time: 1941) analyzed by ICP.

6. Please explain why most soil samples were initially run diluted for lead by GFAA. Exhibit A, Section II.A.3 of the ILM04.0 SOW specifies that samples must be initially run undiluted.

LOCKHEED MARTIN

In Reference to Case No(s).:
25218 Memo #03

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Summary of Resolution:

1. The laboratory corrected and resubmitted Forms 1, 6, and 9 for sodium results in samples MYX292 and MYX292L.

2. The laboratory corrected and resubmitted Form 1 for arsenic result in sample MYX312.

3. The laboratory corrected the percent solids for sample MYX325 based on the benchsheet data and resubmitted the Form 1. The corrected percent solids (84.4) was used to recalculate the results for all of the analytes in sample MYX325.

4. The laboratory corrected the ICV/CCV results initially reported for arsenic on the Form 2As. The ICV/CCV results for arsenic now match the raw data.

5. (a) The laboratory provided the missing runlog.
   (b) Page 78 (runlog) was corrected for sample MYX292L.
   (c) The analyst was preparing dilutions, resulting in a large time gap between a CCB and sample MYX298.

6. The laboratory states that all dilutions performed for lead by GFAA were based on the ICP data (Exhibit D).

Hwadnia Daud-Bailey
Signature

2-14-97
Date

Distribution: (1) Lab Copy, (2) Region Copy, (3) CLASS Copy

LOCKHEED MARTIN

Lockheed Martin Environmental Services
Environmental Services Assistance Team, Region 9
301 Howard Street, Suite 970, San Francisco, CA 94105
Phone: 415-278-0570 Fax: 415-278-0588

MEMORANDUM

TO: Rachel Loftin
Site Assessment Manager
States Planning and Assessment Office, SFD-5

THROUGH: Rose Fong
ESAT Regional Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Jack Berges
Team Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68D60005
Work Assignment No.: 09-96-0-4
Technical Direction No.: 9604113

DATE: February 14, 1997

SUBJECT: Review of Analytical Data

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Victoria Golf Course
SITE ACCOUNT NO.:	ZZ
CERCLIS I.D. NO.:	CAD980818926
CASE NO.:	25218 Memo #04
SDG NO.:	MYX293
LABORATORY:	Analytical Resources, Inc. (ARI)
ANALYSIS:	Total Metals
SAMPLE NO.:	6 Water Samples (See Case Summary)
COLLECTION DATE:	December 10, 11, and 13, 1996
REVIEWER:	Dina David-Bailey, ESAT/Lockheed

The comments and qualifications presented in this report have been reviewed and approved by the EPA Work Assignment Manager (WAM) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Deirdre O'Leary (ESAT/Lockheed) at (415) 278-0585, or Rose Fong (QA Office/EPA) at (415) 744-1534.

Attachment

cc: Bruce Woods, TPO USEPA Region 10

TPO: [X] FYI [ ] Attention [ ] Action

SAMPLING ISSUES: [X] Yes [ ] No

97-02-14-HDB-02/25218M04.RPT

LOCKHEED MARTIN

Data Validation Report

Case No.: 25218 Memo #04
Site: Victoria Golf Course
Laboratory: Analytical Resources, Inc. (ARI)
Reviewer: Dina David-Bailey, ESAT/Lockheed
Date: February 14, 1997

I. Case Summary

SAMPLE INFORMATION: SAMPLE #: MYX291, MYX293, MYX295, MYX301, MYX302, and MYX334

COLLECTION DATE: December 10, 11, and 13, 1996
SAMPLE RECEIPT DATE: December 13 and 14, 1996
CONCENTRATION & MATRIX: Low Concentration Groundwater

FIELD QC: Field Blanks (FB): None
Equipment Blanks (EB): MYX300*, MYX301, and MYX302 (*see Additional Comments)
Background Samples (BG): MYX293
Duplicates (D1): MYX295 and MYX334

LABORATORY QC: Matrix Spike: MYX293
Duplicates: MYX293
ICP Serial Dilution: MYX293

ANALYSIS: Total Metals

Analyte		Sample Preparation and Digestion Date	Analysis Date
ICP Metals		January 3, 1997	January 10, 1997
GFAA:	Arsenic	January 3, 1997	January 10, 1997
	Lead	January 3, 1997	January 10, 1997
	Selenium	January 3, 1997	January 9 through 10, 1997
	Thallium	January 3, 1997	January 9, 1997
Mercury		January 4, 1997	January 6, 1997

TPO ACTION:

None.

TPO ATTENTION:

None.

SAMPLING ISSUES:

The laboratory case narrative states that sample MYX291 was received unpreserved. All of the analyte results in sample MYX291 are estimated (J) due to inadequate sample preservation.

ADDITIONAL COMMENTS:

*The results for equipment blank sample MYX300 are included in Case 25218 Memo #03, sample delivery group (SDG) MYX292.

ADDITIONAL COMMENTS: (continued)

The sampler designated one laboratory quality control (QC) sample for each of the matrices in this case. This case contains 14 soil samples and 12 water samples. Since the laboratory separated the water samples into two different SDGs, another QC sample (MYX293) was selected by the laboratory for this SDG. However, note that sample MYX293 is a background sample. A QC sample should be an investigative sample collected from sampling points which are known or suspected to be contaminated.

The analytical results with qualifications are listed in Table 1A. The definitions of the data qualifiers used in Table 1A are listed in Table 1B. This report was prepared in accordance with the EPA Contract Laboratory Program Inorganic Statement of Work (SOW), ILM04.0, and the document "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review," February 1994.

II. Validation Summary

The data were evaluated based on the following parameters:

Parameter	Acceptable	Comment
1. Data Completeness	Yes	
2. Sample Preservation and Holding Times	No	B
3. Calibration	Yes	
a. Initial Calibration Verification		
b. Continuing Calibration Verification		
c. Calibration Blank		
d. CRDL Standard		
4. Blanks	Yes	
a. Laboratory Preparation Blank		
b. Field Blank		
c. Equipment Blank		
5. ICP Interference Check Sample Analysis	Yes	
6. Laboratory Control Sample Analysis	Yes	
7. Spiked Sample Analysis	No	C
8. Laboratory Duplicate Sample Analysis	Yes	
9. Field Duplicate Sample Analysis	Yes	
10. GFAA QC Analysis	No	D
a. Duplicate Injections		
b. Analytical Spikes		
c. Method of Standard Addition		
11. ICP Serial Dilution Analysis	Yes	
12. Sample Quantitation	Yes	A
13. Sample Result Verification	Yes	

III. Validity and Comments

A. The following results are estimated and are flagged "J" in Table 1A.

- All results above the instrument detection limit but below the contract required detection limit (denoted with an "L" qualifier)

Results above the instrument detection limit (IDL) but below the contract required detection limit (CRDL) are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

B. The following results are estimated due to inadequate sample preservation. The results are flagged "J" in Table 1A.

- All of the analytes in sample MYX291

Sample MYX291 did not meet the 40 CFR 136 (Clean Water Act) sample preservation criteria. The laboratory case narrative states that sample MYX291 was received unpreserved. The laboratory indicated that the measured pH in sample MYX291 was not recorded. (See the telephone record log for more information.)

Sample results may be biased low, and where nondetected, false negatives may exist.

The 40 CFR 136 (Clean Water Act) technical holding time criteria were not exceeded for any of the analytes in any of the samples.

C. The following results are estimated because of matrix spike recovery results outside method QC limits. The results are flagged "J" in Table 1A.

- Selenium in samples MYX291, MYX293, MYX295, and MYX334

The matrix spike recovery result for selenium in QC sample MYX293 did not meet the 75-125% criteria for accuracy. The percent recovery and possible percent bias for selenium are presented below and are based on an ideal recovery of 100%.

Analyte	MYX293 % Recovery	MYX293 % Bias
Selenium	59	-41

Since the results reported for selenium in the samples listed above are nondetected, false negatives may exist.

Matrix spike sample analysis provides information about the effect of the sample matrix on sample preparation and measurement methodology.

D. The following results are estimated because of GFAA analytical spike recovery results outside method QC limits. The results are flagged "J" in Table 1A.

- Lead in samples MYX293, MYX301, and MYX302
- Selenium in sample MYX293

The analytical spike recovery results for lead and selenium in the samples listed above did not meet the 85-115% criteria for accuracy. The percent recovery and possible percent bias for each analyte are presented below and are based on an ideal recovery of 100%.

Analyte	Sample Number	% Recovery	% Bias
Lead	MYX293	84	-16
	MYX301	84	-16
	MYX302	74	-26
Selenium	MYX293	53	-47

The post-digestion spike recovery results for lead and selenium, as noted above, show an analytical deficiency. Since the results

reported for lead and selenium in the samples listed above are nondetected, false negatives may exist.

The post-digestion analytical spike recovery result of 50% in duplicate sample MYX293 for selenium also did not meet the 85-115% criteria for accuracy.

Arsenic, lead, selenium and thallium were analyzed by the graphite furnace atomic absorption (GFAA) technique, which requires that a post-digestion analytical spike be performed for each sample to establish the accuracy of the individual analytical determination.

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #04
Site: Victoria Golf Course
Lab.: Analytical Resources, Inc. (ARI)
Reviewer: Dina David-Bailey, ESAT/Lockheed
Date: February 14, 1997

Analysis Type: Low Concentration Groundwater Samples for Total Metals

Concentration in µg/L

Station Location	GW-1-1			GW-3-1			GW-5-1			GW-13-1			GW-14-1			GW-28-1			Lab Blank		
Sample I.D.	MYX291			MYX293 BG			MYX295 D1			MYX301 EB			MYX302 EB			MYX334 D1					
Date of Collection	12/13/96			12/11/96			12/11/96			12/10/96			12/11/96			12/11/96					
Parameter	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Aluminum	115 L	J	AB	20.0 U			20.0 U			20.0 U			20.0 U			27.7 L	J	A	20.0 U		
Antimony	50.0 U	J	B	50.0 U			50.0 U			50.0 U			50.0 U			50.0 U			50.0 U		
Arsenic	1.0 U	J	B	1.0 L	J	A	1.7 L	J	A	1.0 U			1.0 U			1.7 L	J	A	1.0 U		
Barium	92.6 L	J	AB	42.1 L	J	A	325			1.0 U			1.0 U			339			2.6 L	J	A
Beryllium	1.0 U	J	B	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Cadmium	2.0 U	J	B	2.0 U			2.0 U			2.0 U			2.0 U			2.0 U			2.0 U		
Calcium	314000	J	B	173000			99700			119 L	J	A	32.6 L	J	A	106000			20.0 U		
Chromium	5.0 U	J	B	5.0 U			5.0 U			5.0 U			5.0 U			5.0 U			5.0 U		
Cobalt	3.0 U	J	B	3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U		
Copper	2.0 U	J	B	5.8 L	J	A	2.0 U			3.7 L	J	A	2.0 L	J	A	2.0 U			2.0 U		
Iron	5960	J	B	20.0 U			20.0 U			20.0 U			20.0 U			20.0 U			20.0 U		
Lead	1.0 U	J	B	1.0 U	J	D	1.0 U			1.0 U	J	D	1.0 U	J	D	1.0 U			1.0 U		
Magnesium	82400	J	B	45000			38000			20.0 U			20.0 U			40900			20.0 U		
Manganese	1400	J	B	411			419			1.7 L	J	A	1.3 L	J	A	451			1.1 L	J	A
Mercury	0.10 U	J	B	0.10 U			0.10 U			0.10 U			0.10 U			0.10 U			0.10 U		
Nickel	20.7 L	J	AB	10.0 U			10.0 U			10.0 U			10.0 U			10.0 U			10.0 U		
Potassium	15000	J	B	8570			7730			400 U			400 U			7580			400 U		
Selenium	1.0 U	J	BC	1.0 U	J	CD	1.0 U	J	C	1.0 U			1.0 U			1.0 U	J	C	1.0 U		
Silver	3.0 U	J	B	3.0 U			3.0 U			3.0 U			3.0 U			3.0 U			3.0 U		
Sodium	371000	J	B	418000			78100			324 L	J	A	253 L	J	A	83400			99.1 L	J	A
Thallium	1.0 U	J	B	1.0 U			1.0 U			1.0 U			1.0 U			1.0 U			1.0 U		
Vanadium	9.6 L	J	AB	5.7 L	J	A	6.0 L	J	A	3.0 L	J	A	3.8 L	J	A	4.6 L	J	A	3.7 L	J	A
Zinc	44.6	J	B	18.3 L	J	A	4.9 L	J	A	6.1 L	J	A	4.3 L	J	A	9.8 L	J	A	4.3 L	J	A

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL-Instrument Detection Limit.
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
CRDL-Contract Required Detection Limit

ANALYTICAL RESULTS
TABLE 1A

Case No.: 25218 Memo #04
Site: Victoria Golf Course
Lab.: Analytical Resources, Inc. (ARI)
Reviewer: Dina David-Bailey, ESAT/Lockheed
Date: February 14, 1997

Analysis Type: Low Concentration Groundwater Samples for Total Metals

Concentration in µg/L

Sample I.D.	IDL			CRDL																	
Parameter	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Aluminum	20.0			200																	
Antimony	50.0			60.0																	
Arsenic	1.0			10.0																	
Barium	1.0			200																	
Beryllium	1.0			5.0																	
Cadmium	2.0			5.0																	
Calcium	20.0			5000																	
Chromium	5.0			10.0																	
Cobalt	3.0			50.0																	
Copper	2.0			25.0																	
Iron	20.0			100																	
Lead	1.0			3.0																	
Magnesium	20.0			5000																	
Manganese	1.0			15.0																	
Mercury	0.10			0.20																	
Nickel	10.0			40.0																	
Potassium	400			5000																	
Selenium	1.0			5.0																	
Silver	3.0			10.0																	
Sodium	50.0			5000																	
Thallium	1.0			10.0																	
Vanadium	2.0			50.0																	
Zinc	4.0			20.0																	

Val-Validity. Refer to Data Qualifiers in Table 1B.
Com.-Comments. Refer to the Corresponding Section in the Narrative for each letter.
IDL-Instrument Detection Limit.
N/A-Not Applicable, NA-Not Analyzed

D1, D2, etc. -Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Trip Blank, BG-Background Sample
CRDL-Contract Required Detection Limit

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR INORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared in accordance with the document "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review," February, 1994.

U The analyte was analyzed for, but was not detected above the level of the reported value. The reported value is either the sample quantitation limit or the sample detection limit for all the analytes except Cyanide (CN) and Mercury (Hg). For CN and Hg, the reported value is the Contract Required Detection Limit (CRDL).

L Indicates results which fall between the sample detection limit and the CRDL. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The associated value is an estimated quantity. The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample.

R The data are unusable. The analyte was analyzed for, but the presence or absence of the analyte can not be verified.

UJ A combination of the "U" and the "J" qualifier. The analyte was analyzed for but was not detected. The reported value is an estimate and may be inaccurate or imprecise.

LOCKHEED MARTIN

TPO: [X] FYI [ ] Attention [ ] Action

Region 9

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25218 Memo #04 LABORATORY ARI

SDG NO. MYX293 SITE NAME Victoria Golf Course

SOW NO. ILM04.0 REVIEW COMPLETION DATE February 14, 1997

REVIEWER [ ] ESD [X] ESAT REVIEWER'S NAME Dina David-Bailey

NO. OF SAMPLES: WATER 6 SOIL _____ OTHER _____

	ICP	GFAA	Hg	Cyanide
1. PRESERVATION AND HOLDING TIMES	X	X	X	_____
2. CALIBRATION	O	O	O	_____
3. BLANKS	O	O	O	_____
4. ICP INTERFERENCE CHECK SAMPLE (ICS)	O			
5. LABORATORY CONTROL SAMPLE (LCS)	O	O	N/A	_____
6. DUPLICATE ANALYSIS	O	O	O	_____
7. MATRIX SPIKE ANALYSIS	O	X	O	_____
8. METHOD OF STANDARD ADDITION (MSA)		N/A		
9. ICP SERIAL DILUTION	O			
10. SAMPLE QUANTITATION	O	O	O	_____
11. SAMPLE VERIFICATION	O	O	O	_____
12. GFAA ANALYTICAL SPIKE		X		
13. OVERALL ASSESSMENT	X	X	X	_____

O = Data have no problems or problems that do not affect data quality.
X = Data are qualified due to minor problems.
M = Data are qualified due to major problems.
Z = Data are unacceptable.
N/A = Not Applicable.

TPO ACTION: None.

TPO ATTENTION: None.

AREAS OF CONCERN: None.

LOCKHEED MARTIN

In Reference to Case No(s).:
25218 Memo #04

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: February 6, 1997

Laboratory Name: Analytical Resources, Inc. (ARI)

Lab Contact: Jeff J. Reitan

Region: 9

Regional Contact: Dina David-Bailey, ESAT/Lockheed

Call Initiated By: _____ Laboratory __X__ Region

In reference to data for the following sample delivery group(s):
SDG No. MYX293 (Groundwater samples for Total Metals)

Summary of Questions/Issues Discussed:

1. The laboratory indicated in the case narrative that sample MYX291 was received unpreserved. Please provide the actual measured pH value in sample MYX291.

2. Please explain why the matrix spike samples for arsenic and thallium were initially analyzed at a two-fold dilution, while the unspiked sample was not.

3. Did the laboratory call the Region regarding the selection of sample MYX293 for QC analysis? Sample MYX293 was not specified for laboratory QC analysis on the chain-of-custody form.

4. The case narrative incorrectly indicates that sodium in samples MYX293 and MYX293D was reported from a 5-fold dilution. Raw data and the Form 14 indicate a dilution factor of two. Please revise the case narrative and resubmit.

Summary of Resolution:

1. The laboratory used a pH paper but did not record the measured pH in sample MYX291. In the future, the laboratory will make an effort to record pH values greater than 2.

2. Due to high spike levels, the matrix spike samples for arsenic and thallium were diluted in order to quantitate near midpoint of the calibration curve.

3. The laboratory did not call the Region regarding the selection of sample MYX293 for laboratory QC analysis but will call in the future.

4. The corrected case narrative was resubmitted.

Dina David-Bailey
Signature

2-14-97
Date

Distribution: (1) Lab Copy, (2) Region Copy, (3) CLASS Copy

LOCKHEED MARTIN

Contract Laboratory Program
REGION 9/LABORATORY COMMUNICATION SYSTEM
CSF COMPLETENESS EVIDENCE AUDIT PROGRAM
Telephone Communication Summary Form

AUDIT NO.:	2/97/11	LAB CONTACT:	Jeff J. Reitan
CASE NO.:	25218 Memo #04	LAB CODE:	ARI
SDG NO.:	MYX293	LAB NAME:	Analytical Resources, Inc.
FILENAME:	25218M04.TCS	LAB LOCATION:	Seattle, WA

Summary of Questions/Issues Discussed:

The following items were noted during the case audit of Case 25218/SDG MYX293. Please respond within 10 calendar days of receipt of this Telephone Communication Summary Form by submitting copies of the corrected forms or documenting the corrections in a memorandum or amended case narrative.

1. The Lab column was not checked for the presence of Item 1, Inventory Sheet (DC-2).

2. The page numbers for Item 24, Preparation Logs Raw Data, should range from page 0299 to 0301 instead of page 0299 to 0302. Consequently, the Airbill entry in Item 27, EPA Shipping/Receiving Documents, should list the beginning page as 0302 instead of page 0303. Page 0302 is the cover page for the EPA Shipping/Receiving Documents.

3. Two pages of the ICP raw data were marked as page 94 and no page 96 was found. The auditor designated the ICP raw data for sample MYX293S as page 94, sample MYX295 as page 95, and sample MYX302 as page 96.

Summary of Resolution:

1.-2. The laboratory corrected and resubmitted a copy of the Form DC-2.

3. The laboratory noted and agreed with the auditor.

Jeneliss David-Bailey for MW
Auditor, ESAT/Lockheed

January 31, 1997
Date of Contact

Distribution: (1) Lab Copy, (2) Region Copy, (3) CLASS Copy

LOCKHEED MARTIN

Contract Laboratory Program
REGION 9/LABORATORY COMMUNICATION SYSTEM
CSF COMPLETENESS EVIDENCE AUDIT PROGRAM
Telephone Communication Summary Form

AUDIT NO.: 2/97/12
CASE NO.: 25218 Memo #03
SDG NO.: MYX292
FILENAME: 25218M03.TCS

LAB CONTACT: Jeff J. Reitan
LAB CODE: ARI
LAB NAME: Analytical Resources, Inc.
LAB LOCATION: Seattle, WA

Summary of Questions/Issues Discussed:

The following items were noted during the case audit of Case 25218/SDG MYX292. Please respond within 10 calendar days of receipt of this Telephone Communication Summary Form by submitting copies of the corrected forms or documenting the corrections in a memorandum or amended case narrative.

1. The Lab column was not checked for the presence of Item 1, Inventory Sheet (DC-2).

2. The page numbers for Item 3, Inorganic Analysis Data Sheet (Form I-IN), should range from page 0006 to 0026 instead of page 0006 to 0025. Consequently, the beginning page number for Item 4, Initial & Continuing Calibration Verification (Form IIA-IN), should be page 0027 instead of page 0026.

3. The Chain-of-Custody Records entry in Item 27, EPA Shipping/Receiving Documents, should list the end page as 0474 instead of page 0473.

4. A raw data sheet in between page 384 and 385 was not paginated. The auditor has designated this page as page 384A. Please correct your copy of the data package.

Summary of Resolution:

1.-3. The laboratory corrected and resubmitted a copy of the Form DC-2.

4. The laboratory assigned a pagination number 384A.

Heredina David-Bailey for MW
Auditor, ESAT/Lockheed

January 30, 1997
Date of Contact

Distribution: (1) Lab Copy, (2) Region Copy, (3) CLASS Copy